

The Publication for LightWave 3D, Aura, and Flyer Users

NEWTEKNIQUES

December/January 1999
www.newtekniques.com

YOUR NEWTEK INFORMATION GATEWAY IN PRINT AND ON-LINE



U.S. \$6.95 CAN \$9.95
An Advanstar Publication

**The Evolution of
Will Vinton Studios**

Registered users of PS 1.x can upgrade for only
\$295
 Particle Storm 2.0 available for Intel, Alpha, Mac, and SGI. \$295 price is upgrade from 1.x. Full version price \$495. Prices good through 12-31-98 direct purchase only. Requires LW 5.5+. Special Inspire version available.

PARTICLE STORM 2

Particle Storm 2.0 is here! You've been waiting patiently. You've seen sneak previews at NAB. In 1997. You've read articles, seen beta reviews, and discussed it on the mailing list. And you're wondering JUST WHAT TOOK US SO LONG! Read on...

Particle Fields: Puts an attraction or repulsion radius around each particle, allowing them to flow together or avoid each other. Used with HyperVoxels, you can get realistic ooze and water effects. Used with object replacement or Sub-Objects, your particles won't go through each other. (Figure 1)

Hair: This first of two new emitter types allows you to create responsive hair, string, streamers, etc. (Figure 2)

Spawner: The second new emitter type turns particles into emitters upon collision, or reaching a certain age or speed. Great for fireworks and waterfalls!

Sub-Objects and Sub-Polys: View your particles as LW objects or shapes right in the PS2 interface! (Figure 4)

Mimic: Particles can follow the path of an object in Layout or envelope, and change their size and orientation.

Assembler: Assemble objects or shapes out of particles or their polygons. (Figure 3)

Envelopes: Now envelope almost every parameter.

Layout Integration: Use Layout items to control particle parameters right in Layout.

Sticky Particles: Particles can stick to collision objects, allowing spray-painting effects.

Bounding Shapes: All controllers can use bounding shapes to specify areas of influence.

Collision Detection: Use LW objects, boxes, or ellipses. Now particles can see ahead also avoid collisions.

OpenGL Realtime Preview: The resizable window has drop-down menus and a new tree-control interface. Camera movements have keyboard shortcuts, and many actions are performed with the right mouse button.

Gravity, Wind, Flocking & Swarming, Drag, Force Fields, Death Wish: They're all still there, now with Bounding Shapes, Envelopes, and parenting to Layout reference items.

Particle Shader: Enhanced with separate keyframes for color and Alpha channels.

Parenting: Control each individual channel with Envelopes or Layout reference items.

For more information or to download a demo, please visit our newly redesigned website:

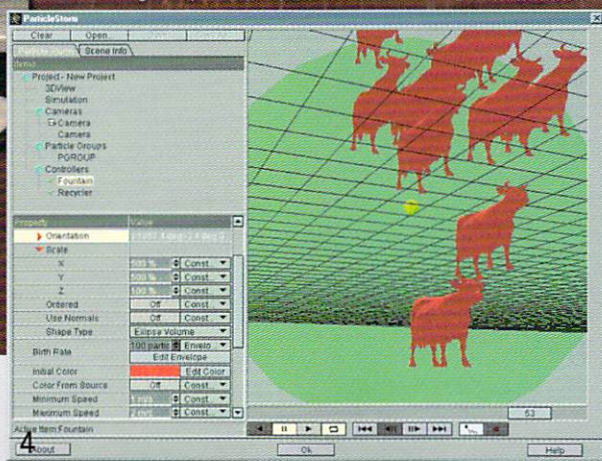
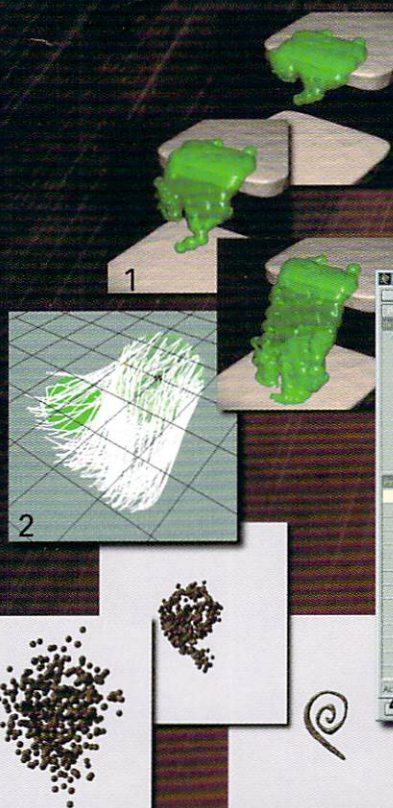
Circle #201

www.dynamic-realities.com

or call 800-944-5520



1900A Pewaukee Road Waukesha, WI 53188
 414-549-2200 Main 414-549-2225 Fax



1) Particle Fields and Hypervoxels 2) Hair reacting to a Collision object.
 3) Assembler creating the LW logo out of Hypervoxels. 4) The intuitive new OpenGL interface. Particles are emitting as cows using the Sub-Objects feature! 5) Background image created with PS2 and HyperVoxels 2.0.

Coming soon: RealTools volume 2, Fractalizer 1.5, Grime, Advanced Gradient Controller, and Digital Nature Tools.

NewTekNIQUES

CONTENTS

Volume 2, No. 6, December/January 1999

www.newtechniques.com



FEATURE STORY

page 8

The Evolution of Will
Vinton Studios

by Dick De Jong and Molly Dinkins



Create animated banners with Aura!
Pages 30-32.

COLUMNS

Plugged In: Popular Plug-in Architectures 4

by Bob Hood

Wave F/X: Joyrider—The Dream is A Reality 20

by Greg Nelson

Waves: Can You Pass The Test? 22

by John Cross

Flying High: Good News Plus Q&A 36

by Joe Tracy

Mojo: High-Tech Films Teach Low-Tech Lessons 48

by Mojo

REVIEWS

Reviews are now online and for
subscribers only!

www.newtechniques.com/bonus

The December/January NewTechniques
online bonus section opens Jan. 2.

Scott Wheeler is on vacation and returns
with LightWave 301 in February!

Learn how to create dust
clouds and nebulae.
Pages 24-29.

TUTORIALS

Feature Tutorial 14

by Daniel Smith

Dust Clouds 24

by Dave Jerrard

Aura Banners 30

by William Vaughn

DEPARTMENTS

TekTalk 2

A cool new product is coming from NewTek!

Premieres Online

Located in the bonus area.

Renders Online

Top submissions of images
created by readers.

ShortTakes Online

The latest news and happenings in the world
of NewTek and beyond.

Surf Report Online

The best Web sites to visit!

Ask NewTek Online

Your questions answered!

Access all online material at
www.newtechniques.com/bonus.

ON THE COVER:

This issue's cover was designed by the team at Will Vinton Studios for the new Las Vegas 3D film "The Lost 'M' Adventure." The image, created in LightWave 3D, is taken from near the end of the film where the two characters must rescue Red's "M" from a burning furnace. The film was directed by Gayle Ayers. The technical director for the shot was Steve Bailey. The animators were Wendy Fuller and Kirby Atkins.





TekTALK

OUR EDITOR'S OPINIONS ON IMPORTANT NEWTEK ISSUES

BY JOE TRACY

It looks like 1999 could be the best year ever for NewTek and its users.

1999 Looking Very Good for NewTek NEW YEAR - NEW PRODUCTS!

There's no doubt that 1999 is shaping up to be one of the best ever for NewTek. Hot off of the independent research study that found that LightWave 3D dominates more than 50 percent of seats in the broadcast and film industry, NewTek will introduce a new version of its popular program and some new products. Let the revolution begin!

Frame Factory

By the time you read this, NewTek will have already introduced its newest product—Frame Factory (working title at this point). Frame Factory is NewTek's first professional hardware and software digital video and animation solution for Windows NT. For less than \$4,000, Frame Factory includes optimized versions of LightWave 3D and Aura that work in conjunction with the Frame Factory video I/O board that delivers uncompressed video.

In late Fall, I had detailed conversations with some of the Frame Factory beta testers who have been thoroughly impressed with NewTek's latest product. Those I spoke to also stated that this was one of the most interactive beta testing programs they had ever participated in, with NewTek constantly keeping in contact with each beta tester and providing a quick turnaround time to any questions or problems. This is the type of NewTek that will make strides in the marketplace and I highly commend everyone involved with the development of this product.

Project Purple

Hot on the heels of Frame Factory is the next generation of LightWave 3D. Code-named "Project Purple," NewTek has been highly secretive about what it will contain. With a dozen people working on it day and night and many Hollywood companies getting inside peeks, the buzz is beginning to build. One person I spoke with told me, "This isn't LightWave 6.0—it's LightWave 10.0." Even though NewTek isn't giving out any shipping dates (rightfully so), my personal feeling is that we will see it around June or July.

Want More Products?

You would think that with Frame Factory, LightWave 3D, Inspire 3D, the Video Toaster, Video Toaster Flyer and Aura, that NewTek would be done. Nope. I'm hearing that we may expect one or two new products from NewTek in 1999! Add to that a possible upgrade for Aura and it looks like NewTek will finally break its barriers and retain a rather solid profit and much deeper user base.

More Than 50 Percent of the Market?

A recent independent study by Jon Peddie Associates showed that LightWave 3D has a greater than 50 percent hold on the film and broadcast 3D market! "LightWave 3D has the largest installed base far and above any other 3D package on the market according to our recent study on 3D applications," said Jon Peddie Associates' senior analyst, Wanda Meloni. Studies like this and years of hard work seem to be paying off for NewTek, which has taken many gambles and now looks to score the jackpot!

Keep up to date with the latest news at the NewTekniques Daily TekTicker, located on the Web at www.newtechniques.com/TekTicker. There's also a new LightWave and Flyer Help Forum there.

Until next time, may all your productions be profitable and dreams become a reality. Happy new year!

NewTekNIQUES

VOLUME 2 • NUMBER 6 • Published by ADVANSTAR Communications
www.newtechniques.com

PUBLISHER MICHAEL FORCILLO
ASSOCIATE PUBLISHER JOE TRACY
EDITORIAL DIRECTOR FRANK MOLDSTAD
SENIOR TECHNICAL EDITOR JOHN GROSS
ASSOCIATE EDITORS JOHN VIRATA,
 AMY WOODS, MAYA COINTREAU
CONTRIBUTING EDITORS DICK DE JONG
 AND MOLLY DINKINS
LEAD TUTORIAL WRITER DAVE JERRARD
COLUMNISTS JOHN GROSS, BOB HOOD,
 SCOTT WHEELER, GREG NELSON, MOJO
ART DIRECTOR HEIDI SANDISON
ADVERTISING (714) 513-8683
AD COORDINATOR KEELY JONES
PROMOTIONS KELLY HAGGARD
PRODUCTION
SR. PRODUCTION MANAGER MARIA
 KRISTINA ADAMEK

HOW TO REACH US:

NewTekniques, 201 E. Sandpointe Avenue,
Suite 600, Santa Ana, CA 92707, USA
email: jtracy@advanstar.com
Tel.: (714) 513-8400, Fax: (714) 513-8612

MARKETING SERVICES
REPRINTS Mary Clark (800) 822-6678 • FAX (541) 686-5731

BUSINESS
GROUP VICE PRESIDENT Danny Phillips
GROUP EDITOR Frank Moldstad
DIRECTOR OF OPERATIONS Michael T. Weldon
GROUP CONTROLLER Colette O'Donnell
OPERATIONS PROD. DIRECTOR Michael T. Weldon
VICE PRESIDENT, CIRCULATION Francis Heid, Jr.
CIRCULATION MANAGER Darryl Arquette
MARKETING SERVICES DIRECTOR L. Ghio Imburgio
SUBSCRIBER CUSTOMER SERVICE (800) 346-0085 # 477
 (218) 723-9477- Outside U.S.A.

INTERNATIONAL LICENSING Tammy Lillo (218) 723-9518

CORPORATE OFFICERS
CHIEF EXECUTIVE OFFICER Robert L. Krakoff
VICE CHAIRMAN James M. Alic
VICE PRESIDENT, BUSINESS DEVELOPMENT Skip Farber
EXEC. VICE PRES. William J. Cooke, Alexander S. DeBarr
VICE PRES. FINANCE/CFO & SECRETARY David W. Montgomery
TREASURER & CONTROLLER Adele D. Hartwick

© 1998 by Advanstar Communications. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including by photocopy, recording or information storage and retrieval system, without permission in writing from the publisher. Authorization to photocopy items for internal or personal use is granted by Advanstar Communications for libraries and those registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. Phone: 978-750-8400; Fax: 978-750-4470; call for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. For those not registered with the CCC, send permission request in writing to Permissions Dept. Advanstar Communications, Inc. Advanstar House Park West Sealand Rd. Chester CH1 4RN, UK or fax to 011-44-1244-383356.

NEWTEKNIQUES is an independent publication of Advanstar Communications. LightWave 3D, Inspire 3D, Aura, Video Toaster, and Video Toaster Flyer are registered trademarks of NewTek, Inc.

Printed in the U.S.A.

Unleash The Power of LightWave 5.6 & AURA

New Training Videos For Unlimited Creative Control



LightWave 3D 5.6 Natural Effects

Learn the latest 5.6 features. Create amazing liquid & blob animations with Hyper Voxels. Advanced surfacing shaders like snow, rust, opalescence and oily film. Day, night or ethereal environments with Sky Tracer and more.

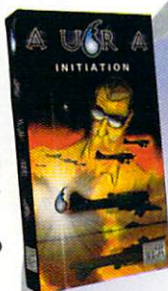
120 min. \$49.95 #DI1050



AURA

Get up and running fast with this new paint and animation powerhouse. Techniques for creating animated text and custom backgrounds. Build multi-layered composites, add texture and depth to video sequences.

40 min. \$29.95 #DI1051



AURA INITIATION

Travel deep into AURA's feature rich tool set. Experience the thrill of real time video painting. Feel the speed of lightning fast rotoscoping. Your senses explode with virtually unlimited compositing capabilities and more.

100 min. \$49.95 #DI1052

The LightWave 3D 5.5 Essentials Series

Learn 3D animation the easy way! Discover animation, modeling, surfacing, lighting attributes, camera techniques, spline patching, inverse kinematics and more! This powerful training series will cut your learning curve and enable you to master one of the most popular 3D animation programs available today!

Quickstart 5.5

#DI1042

Layout Views, Creating Keyframes, Preview Animations, Image Rendering, Primitive Objects & Modeling Tools

Modeling Essentials

#DI1044

Text Objects, Modification Tools, Surface Attributes, Polygonal Modeling, Metaform & Metanurbs

Animation Essentials

#DI1045

Object & Camera Motion, Cyclical Animation, Motion Graphs, Object Morphing & Displacement Mapping

Surfacing Essentials

#DI1046

Texture, Bump & Reflection Maps, Procedural Textures, Raytracing, Projection Maps & Cel Shader

Lighting & Camera Effects

#DI1047

Animating Lights, Shading Techniques, Shadow Mapping, Lens Flares, Lighting Tricks, Camera Motion Tips, Depth of Field, Rack Focus & Image Projection

Power Modeling

#DI1048

Bevels & Drills, Cutting Tools, Boolean Techniques, Hierarchical Modeling, Multiple Clone & Extrusion, Spline Patching & Meta-Nurbs Modeling

Kinematics & Contortions

#DI1049

Forward Kinematics, Inverse Kinematics, Displacement Effectors, Deformation Plug-Ins, Animating Bones, Muscle Flexing, Replacement Animation

Each Tape only \$49.95 - Call Now For Special Package Discounts - 30 Day Money Back Guarantee!



Photoshop Essentials

Digital artist & instructor Katrin Eismann reveals amazing time saving tips & techniques for color correction, levels & curves, layers, keyboard shortcuts, hidden commands and much more!

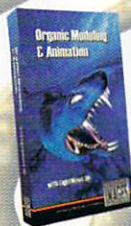
#DI1041



Photoshop Creative Compositing

Discover layering techniques for depth and dimension, channel & layer masks for seamless image blends, create special effects for amazing multi-dimensional digital imagery.

#DI1043



Organic Modeling & Animation

Give your projects life-like qualities with techniques used by top professionals. Modeling tips, Puppet Master, Morph Gizmo, Inverse Kinematics & more!

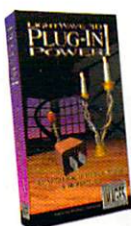
#DI1040



Steamer

Discover all you need to know about the amazing new volumetric lighting engine for LightWave 5.5. Create lightbeams, dust clouds, smoke trails and more!

#DI1039



Plug-In Power 1

Learn about three incredible Plug-Ins for LightWave 3D. Advanced modeling capabilities with Macroform, particle animation with Particle Storm & advanced image processing with WaveFilter.

#DI1038

The Creative Magic of Ron Thornton

Learn emmy award winning techniques for modeling, surfacing, image compositing and special effects from Babylon 5 and Star Trek Voyager effects pioneer Ron Thornton. Follow along using Ron Thornton's own creations, with the Digital FX Collection CD Rom, filled with all of the models, scenes & image sequences used in his tapes!

- Spacecraft Model Design #DI1023
- Digital Cinematography #DI1034

- Spacecraft Surfacing Techniques #DI1024
- Cinematic Visual Effects #DI1035
- Digital FX Collection CD Rom #DI5001

24 Hour Order Hot Line!

1-800-377-1039

On-Line Order Catalog
www.desktopimages.com

Desktop Images P.O. Box 10908 Burbank, CA 91505, 818-841-8980 fax 818-841-8023 email - sales@desktopimages.com
add \$4.95 S&H for first tape plus \$1.50 each additional tape. CA residents add sales tax. For PAL add \$5.00 per tape

mastering the tools of tomorrow



Plugged In

LIGHTWAVE ADVANCEMENTS THROUGH PLUG-IN SCRIPT WRITING

Callback functions make most plug-in architectures in Layout function different from Modeler.

BY BOB HOOD

POPULAR PLUG-IN ARCHITECTURES



Figure 1: Cave scene in normal lighting.

To a software developer, an application with a plug-in API is like a new house to a carpenter. While it may come with many useful and modern features, there's always something lacking. Fortunately, you have the skill and the tools to do something about it!

I trust the holidays find you and yours well, fellow developers. If you have any room left after so much feasting, and a modicum of attention remaining after so much merriment, let's munch on some hors d'oeuvres in preparation of the upcoming Layout courses.

plug-in robustness between Modeler and Layout stems largely from the nature of the applications. For Layout to achieve its purpose, it must implement and manage many different (but interrelated) mechanisms. Allowing plug-in access to each of these mechanisms will consequently provide a greater range of expandability.

Cornucopia

LightWave 3D Layout offers plug-in developers many options when it comes to extending its functionality. Compared to Modeler's single plug-in architecture (technically Modeler offers two—CommandSequence and MeshDataEdit—however, MeshDataEdit functionality can be wholly accessed in any CommandSequence plug-in), Layout provides many plug-in types that users can interact with for controlling a range of animation functions. This apparent disparity in

Something from the Menu?

We will focus our attention on the most popular plug-in architectures that Layout offers: Image Filter, Object Replacement, Pixel Filter, Item Animation, Displacement Map, Procedural Texture (Shader), and Generic. Of these seven, LScript can be used for all but Pixel Filter. Layout provides more plug-in types than these, but the rest can be considered "system" types because they do not provide for direct user interac-

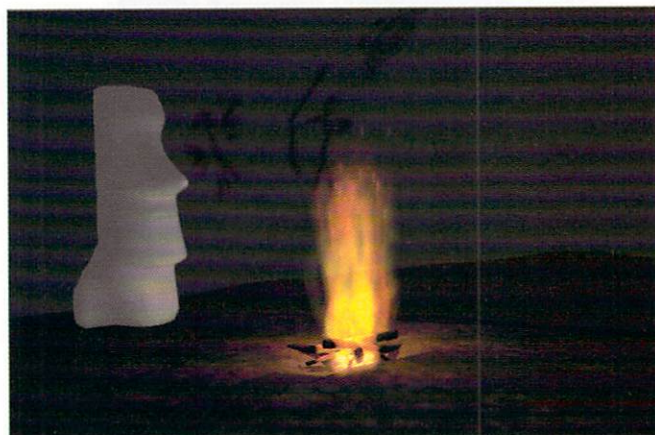


Figure 2: The same cave scene with selected luminosity values increased.

tion. Consequently, they do not appear on—and cannot be managed by the user from—any of Layout's plug-in menus.

Layout Plug-in Ingredients

Most plug-in architectures in Layout function differently from Modeler. In Modeler, when plug-ins are executed, they begin and end with that one invocation. When a Modeler plug-in completes, its processing life is over.

On the other hand, Layout plug-ins (with the notable exception of Generic types) will usually continue functioning even after the plug-in returns control back to Layout. This "modeless" form of operation is accomplished using "callback" functions. Layout will use these callback functions as it progresses in its processing, giving execution time to each in support of Layout's various processing states.

While some user plug-in architectures use specialized callback functions, all share a set of common callbacks. These are:

Activate—Invoked by Layout when the plug-in is first selected by the user, this function is responsible for setting pointers to the other callback functions mentioned below. LScript does not support this callback.

Create—Each time the plug-in is activated in a plug-in slot in Layout, this function is called to generate "instance" data. Because only one physical copy of the plug-in code is contained in memory, plug-ins must be designed to process instances. This function generates data for a particular instance. Of course, LScript automatically manages instance data, so this function is used in LScript to initialize instance data.

Destroy—When an instance of the plug-in is deactivated by the user, this function is invoked with the data that belongs to the instance being released. Again, LScript will automatically release instance data.

Copy—this function is called immediately following a call to create() to make a copy of an instance's data. Copying is essentially the same as creating a backup copy of instance data, and is typically done in anticipation of undoing some action. In particular, copy() will be called for Item Animation plug-ins in case

the "Cancel" button is selected on the Graph Editor panel. Regardless of the outcome, the destroy() function will be called to discard one of the instance copies. LScript performs this operation internally.

Load—Called by Layout to enable a plug-in to read any previously saved data. The input stream can be attached to either an ASCII scene file, or a binary Object file, depending upon the type of plug-in (i.e., Shader data is stored in LightWave Object files).

Save—When a scene or object file is saved, this function is called so the plug-in can store any instance data into the output stream.

Process—This function is the heart of the plug-in. A plug-in's custom functionality begins here, and this function is typically called by Layout during the creation of each frame of animation (whether it is full-frame output or previewing).

Options—An LScript pseudonym for the C-level Interface callback, this function is called by Layout when the user presses the "Options" button next to the plug-in. It is within this function that you will create and post a requester to allow the user to alter the operational parameters of your plug-in.

LScript for Dessert

As with Modeler, LScript brings power to the Layout plug-in developer. Not only does it simplify (in some cases, greatly) the actual writing of plug-ins, in the case of Layout, LScript allows any of the callback functions to be optional! If you don't need a function, it doesn't have to exist in your script. This helps keep your script uncluttered and easier to read.

Let's dig into Layout plug-in writing by creating an Image Filter LScript. Image Filter processing is performed after all of the RGB data has been generated for a frame of animation. Image Filters are true filter applications, so RGB data must be read from, and returned to, Layout whether or not it has been altered by the Image Filter plug-in. If RGB data is not read and returned to Layout, those pixels will be set to black (RGB color <0,0,0>) in the resulting image for the first filter.

As you might expect, LScript/IF simplifies

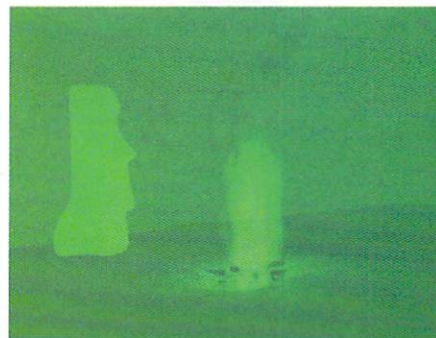


Figure 3: Night vision in the cave scene.

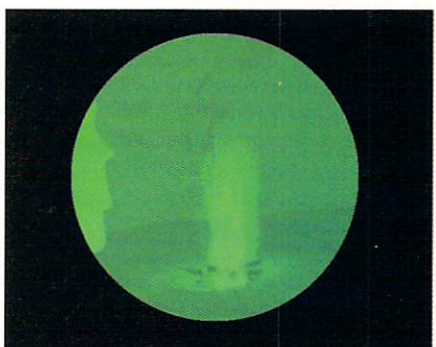


Figure 4: Optional lens and cross-hair effects applied.

this process for the script writer. LScript/IF allows scripts to access RGB data in a random fashion, and takes care of passing the RGB data back to Layout when the process() function completes. As of LScript v1.4, this image data "caching" is automatic.

'Greening' Your Image

The Image Filter script in Listing 1 will produce a "night vision" simulation on your image. Figure 1 is the scene we shall work with. Running this Image Filter script on that particular image would give us a night vision-like look, but the darker areas in the scene would still be dark—just green instead of black. No additional detail would be seen, as a true night vision scope would reveal.

In order to get the detail in our night vision simulation, we will selectively increase the luminosity of some surfaces so that their details will show through in our result. Figure 2 shows the scene with the luminosity of selected surfaces increased. This scene will produce an effect much more closely resembling that produced by a real night-vision scope. Figure 3 illustrates the resulting effect produced by the script in Listing 1.

We begin our script by creating some global variables (line 4). Because of the modeless operation of Layout LScripts, we have to depend more heavily on global variables to maintain information between our callbacks.



In our `create()` function, we initialize the values of our globals (lines 8 through 12), and place a call to the Layout LScript `setdesc()` function. This function sets the name of the plug-in as it appears to the user on the Layout panel. If a Layout script does not set this value, then only the name of the script will be used to identify the plug-in.

Next is the `options()` function. If you've followed along during my recent Modeler-related columns, there really should be few surprises here. Pains have been taken to make Layout LScript requester creation look and feel virtually the same as Modeler LScript. The only thing that differs from Modeler is the test that is performed with the `reqbegin()` function call.

Because Layout does not provide built-in requester facilities (like Modeler), a specific plug-in must be available to facilitate requester creation in Layout. LScript will return a logical "false" value if this plug-in has not been loaded into Layout. Without the plug-in, a requester cannot be created, so the script should simply return upon failure.

In our `process()` function, we initialize some variables to hold settings for the lens effect (lines 45 and 46) if it has been activated. We then loop over all the pixels in the image (lines 48 through 77) using two `for()` loops; an outer loop to traverse the height of the image, and an inner loop to traverse each pixel of a particular line.

For each pixel we process (retrieved using the `getpixel()` function on line 52), we first see if it falls within the visible range of the lens. If you will recall from previous columns, the `vmag()` function is used to calculate the distance between two points in 3D space where one is situated at the origin ($<0,0,0>$). The `vmag()` function also can be used to calculate distances in 2D space by simply setting the values for any unused axis to zero (0). In this case, we are (arbitrarily) disregarding values along the Z axis, and plugging pixel 2D coordinate values into the X and Y axis locations. Although the resulting values are not valid measurements in a 3D universe, they provide

continued on page 35

Listing 1: The LScript image filter night vision script.

```

001: @warnings
002: @version 1.4
003:
004: gain, lens, cross, useLens, useCross;
005:
006: create
007: {
008: gain = .4; // color gain (40%)
009: lens = .5; // lens radius (percentage of
image height)
010: cross = .25; // cross size (percentage of
lens diameter)
011: useLens = true;
012: useCross = true;
013:
014: setdesc("NightVision - Bob Hood");
015: }
016:
017: options
018: {
019: if(!reqbegin("NightVision - Bob Hood"))
020: return;
021:
022: c1 = ctlnumber("Color gain", gain);
023: c2 = ctcheckbox("Use lens?", useLens);
024: c3 = ctlnumber("Lens radius", lens);
025: c4 = ctcheckbox("Make crosshair?", use-
Cross);
026: c5 = ctlnumber("Crosshair radius", cross);
027:
028: if(reqpost())
029: {
030: gain = getvalue(c1);
031: if((useLens = getvalue(c2)) == true)
032: {
033: lens = getvalue(c3);
034: cross = 0.0;
035: if((useCross = getvalue(c4)) == true)
036: cross = getvalue(c5);
037: }
038: }
039:
040: reqend();
041: }
042:
043: process: width, height, frame, starttime,
endtime
044: {
045: v1 = <width / 2, height / 2, 0>; // this is
the center of our lens
046: max_rad = vmag(v1) * lens;
047:
048: for(y = 1; y <= height; y++)
049: {
050: for(x = 1; x <= width; x++)
051: {
052: (r, g, b) = getpixel(x, y);
053:
054: v2 = <x, y, 0>;
055: dist = vmag(v1 - v2);
056:
057: if(useLens && dist > max_rad)
058: putpixel(x, y, 0, 0, 0);
059: else
060: {
061: level = ((r + g + b) / 765.0) + gain;
062: if(level > 1.0) level = 1.0;
063:
064: if(randu() < .3)
065: {
066: level -= .1;
067: if(level < 0.0) level = 0.0;
068: }
069:
070: r = 0;
071: g = 255 * level;
072: b = 0;
073:
074: putpixel(x, y, r, g, b);
075: }
076: }
077: }
078:
079: if(useCross)
080: draw_cross(v1, max_rad * cross);
081: }
082:
083: draw_cross: center, max_size
084: {
085: i = 5;
086: while(true)
087: {
088: putpixel(center.x, center.y + i, 0, 255, 0);
089: putpixel(center.x, center.y - i, 0, 255, 0);
090:
091: v2 = <center.x, center.y + i, 0>;
092: dist = vmag(center - v2);
093: if(dist > max_size)
094: break;
095:
096: ++i;
097: }
098:
099: i = 5;
100: while(true)
101: {
102: putpixel(center.x + i, center.y, 0, 255, 0);
103: putpixel(center.x - i, center.y, 0, 255, 0);
104:
105: v2 = <center.x + i, center.y, 0>;
106: dist = vmag(center - v2);
107: if(dist > max_size)
108: break;
109:
110: ++i;
111: }
112: }

```

JOE TRACY'S Flyer Mastery Guide

Version 2.0

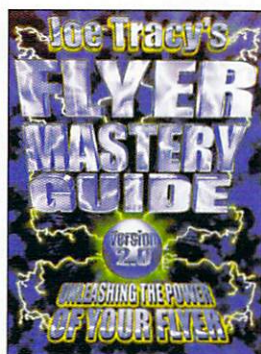
Now available through many dealers/resellers and direct from the publisher, Studio Visions.

Flyer Mastery Guide - Version 2.0 offers:

- New Chapters
- Updated Information
- and the Flyer Mastery CD-ROM full of images, backgrounds, objects, and other goodies.

Cost for upgrading from the first book is \$74.95 and must be ordered directly through Studio Visions. Studio Visions can be reached by phone at (800) 672-1880 or at www.studiovisions.com

New purchases retail at \$129.95.



Some dealers are now bundling this book with new Video Toaster Flyer systems.

"Simply Amazing! Who knew my favorite leisure reading would be a technical manual!"

Dave Jones of Dave Jones Productions

"I thought I knew a lot about the Toaster Flyer. I can't believe how little I knew. Should be called the Flyer's Bible!"

Pete Hickerson of CVM Productions

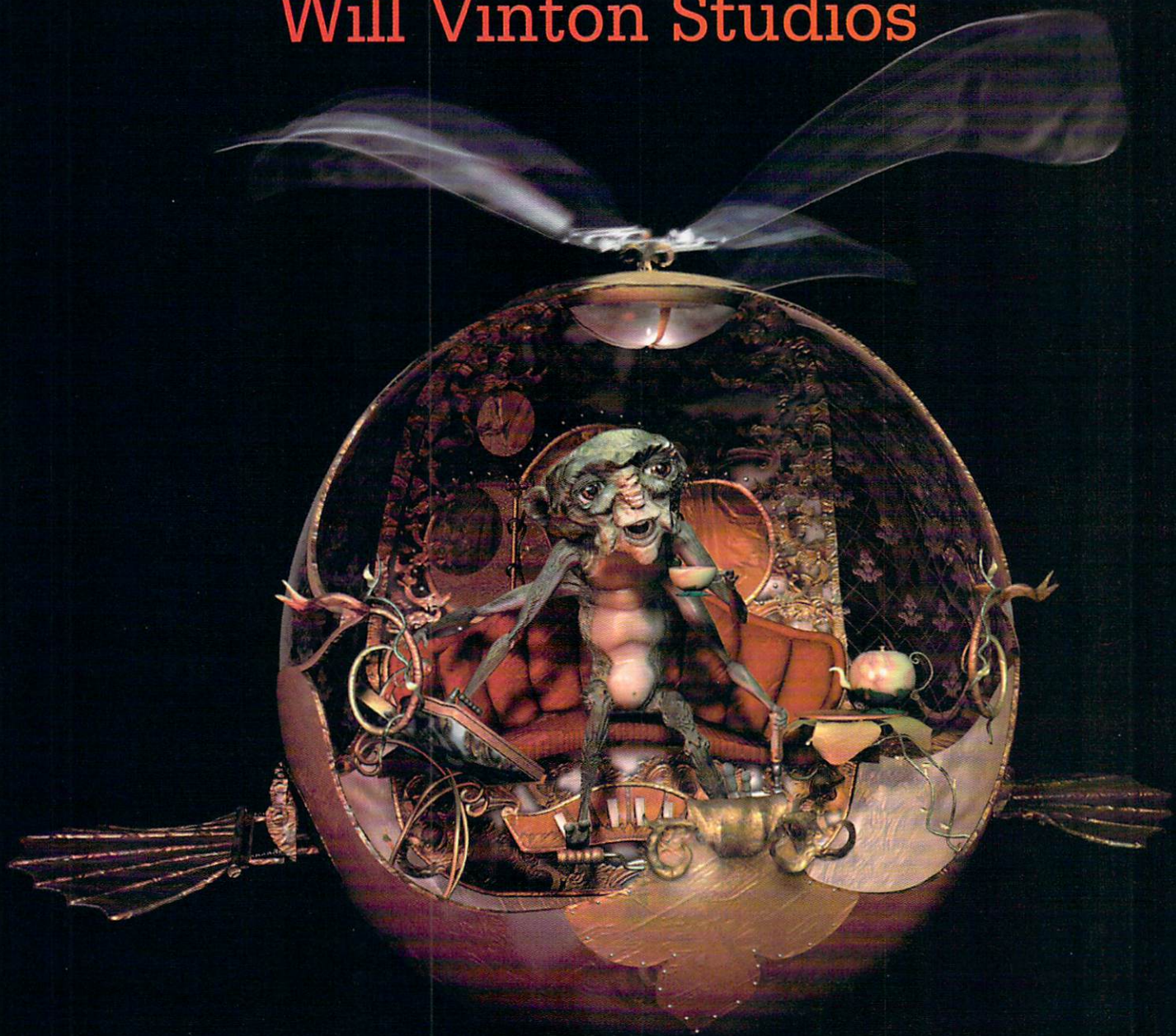
"I love this manual! Thanks so much. It has made my life so much easier!"

Victoria Kelly of Equine Video Productions

"Without a doubt, Joe Tracy's Flyer Mastery Guide is the single most effective, informative, biggest bang for the buck item I have purchased since beginning video productions/editing 10 years ago."

Earl Chessher of CORELANN Productions

The Evolution of Will Vinton Studios



From Claymation to LightWave 3D



This image, from the M&M's "Vacuum" commercial, aired in Spring 1998 to promote mini M&M's. It was directed by Kirk Kelley of Will Vinton Studios.

Will Vinton faced an evolution challenge in the early 90s as pixels challenged clay for a share of the animation turf. Indeed, for 18 years, the company had molded an illustrious reputation with its Claymation® style, a term coined to identify its stop-motion and clay animation technique.

"It was time to stop being purists about clay," Vinton said, explaining the tectonic shift the studio started in 1993. "We redefined ourselves. It was not the tool but the look that was important." So the handcrafters joined the finger-tappers with a firm handshake.

Matthew Brunner—a painter, sculptor, and computer animator—was hired to set up the studio's new computer animation division. Describing the alliance, Brunner said, "I think we are the only company in the world that has a full-fledged computer animation facility side-by-side with a stop-motion studio."

Now, almost 10 years after the California Claymation raisins strutted their puckered stuff into our national Zeitgeist, the LightWave 3D cavorting candies from Mars (M&M's) have joined the Vinton family as America's favorite commercial sweethearts.

Building Character

In the world of advertising, M&M's have had a marathon run—15 ads in

At Left: This creation, titled "Contraption," is part of an animated logo design for WV3D—Will Vinton Studios' location-based entertainment arm. The director for this animated shot was Matthew Brunner.

three years, not including the ones for the European and Japanese markets, with a new series just completed and slated for a Super Bowl premiere.

The long-running success of this chocolate chronicle is built on a solid foundation of strong characters. Will Vinton Studios, which created the colorful cast of candies using LightWave 3D, has gained a reputation for its ability to develop full-bodied characters that can engage you over multiple viewings. Even the hyperactive horde of M&M Minis has a distinctively mischievous nature.

The process of character development is "absolutely important," said Paul Diener, Vinton's director of digital production. "We sit down with the ad agency and the client and discuss the character's sociology, psychology, and physiology."

Using a whiteboard, the group tries to answer questions such as, "What is the world like that the character exists in?" or "What are his or her ambitions and frustrations, flaws and strengths?"

"You get very energized because you are creating life," Diener said.

To assure that the whiteboard concept is faithfully reflected in the final design, Diener said, "Our director on the project is part of the process. He or she becomes the brain trust of the character."

Vinton artist Robin Ator explains how to flesh out the character visu-



This close-up of a character named Zeke was created for a Cyrix promotional campaign. The animation was directed by David Daniels of Will Vinton Studios.

Feats of Clay

An unexpected Oscar launched Will Vinton Studios. A Claymation film called "Closed Mondays," co-created by Vinton and classmate Bob Gardiner, won the 1975 Academy Award for Best Animated Short.

"The film started as an experiment to show off ideas," explained Vinton, an Oregon native. "It was almost a demo reel; we wanted to find a new way to express how clay could come to life."

Just how did an architecture graduate from the University of California at Berkeley end up in clay? "The initial core group at the studio were frustrated idealistic architects with an artistic bent who were looking for other outlets," said Vinton. For this group, that path took them into sculpting and filmmaking.

To Vinton, clay was just a raw material. He loves character animation and storytelling. Regardless of the tools, techniques or styles, "breathing life into characters" and "making good movies by good storytellers" are Vinton's *raison d'être*. And making raisin eaters of more Americans was just one of Vinton's feats of clay.

ally: "Often the ad agencies will have an idea in words. It's surprising how many of them can't draw. It's a little like mind reading. If it's a conference call, I will do sketches—up to 30 in a couple of hours—and fax them for comments."

After responding to the notes with more sketches, the design is refined. When approved, the character is sculpted in clay even if it is a CG project. Diener added, "We will continue to massage the character throughout the project. And for a longer campaign, we will massage it over the series of ads."

The development process can run into the occasional road bump. "Sometimes with agencies, there are things they have to get across in the spot. Moments needed to reveal the character are limited by the cop," Diener said. "Pauses allow opportunities for good drama."

Coming at You

After rising into the stratosphere of TV land, the roguish Red and nutty Yellow M&Ms characters were ready to expand. What more appropriate arena for these LightWave 3D stars than into the third dimension. And where better for these kings of candies to appear than Elvis' old stomping ground, Las Vegas.

In October, Will Vinton Studios (in association with Ethel M, Inc., BBDO ad agency and Landmark Entertainment) premiered *The Lost "M" Adventure*, a nine minute 3D film for the M&Ms world store in Las Vegas. Yes, in this city of Lost Wages, Red literally loses his M. He and his trusty sidekick Yellow venture into the valley of Lost Causes to retrieve his M-ness.

Designing the 3D film generated a unique set of technical challenges

for Vinton's LightWave animators. One of the biggest issues was designing a technique for seeing the stereoscopic images in 3D before they were transferred to film and projected. Daniel Smith, a technical director on the film, figured out an ingenious method of viewing the shots in 3D as they were playing on the DPS Perception card.

"3D effects are hard on the eyes. We found that we could script about one big 3D shot per minute." Said Gail Ayers, Vinton's director on the project. "Even then, it has to be set up to work well. And it has to go at a certain speed."

(For more details on LightWave and stereoscopic rendering, read Daniel Smith's tutorial, "Seeing the Dimensional World," on page 14.)

Back to Earth

Will Vinton's beginnings are literally rooted in clay and stop-motion animation. (See the "Feats of Clay" sidebar.) Being a good team player, LightWave sometimes has a supporting role in the studio's projects. "The PJ's" is a great example of how Vinton artists have integrated LightWave with stop motion and foam characters. Soft foam molded over flexible wire stick figures often replaces clay because it withstands the constant manipulation and resists the heat of the lights.

The brainchild of Eddie Murphy, "The PJ's" is a prime time animated comedy series that takes an irreverent look at life in the inner city. "The PJ's" is in Fox's mid-season lineup and should begin airing in early 1999. (Fox has ordered 13 episodes.) Thurgood "Goodie" Stubbs (voice by Eddie Murphy, hair by Don King) stars as the super for a housing project that is home to a wild assortment of personalities like the Haiti Lady.

"Ninety-nine percent of the character animation is stop motion," said Stephen Bailey, "The PJ's" senior technical director. "About 25 percent of each show is CG work. Actually, episode three is about 50 per-



Calvin hangs over a building in this combination stop-motion and LightWave 3D image from "The PJ's"—a new series airing on Fox beginning in January. The executive producer is Eddie Murphy. The LightWave special effects director is Steve Bailey, who also serves as a technical director for Will Vinton Studios.

Will's Whimsical World

Flanking the entrance of the Will Vinton Studios are two sculptures—architectural replicas of Mark Twain's airship from the 1984 animated feature, the "Adventures of Mark Twain." At sundown, they light up. Inside, a two-story gallery of retired sets, props, characters and sculptures obscures the requisite—albeit deserved—showcase of awards: Oscar, Emmys, Clios. A set containing a three-foot telephone dwarfs an adjacent miniature metal kinetic horse. Nearby, a clay Christmas scene twinkles with the press of a light switch. Model builders have recreated a miniature Japanese lodge replete with electric lanterns and a hand-woven raffia courtyard. Heads of Tom Sawyer and claymates line up on another wall. Everywhere, vintage Vinton.

A walkthrough the catacombs of computer cubicles to the stop-motion studios reveals one secret of Vinton's success and longevity: the absence of the industry's sex and age bias. The hospitable and creative environment both attracts and retains men and women, young and veteran artists. The mix adds depth and experience to the Vinton creative community. For example, Joan Gratz, a longtime Vinton director, won an Oscar for her lyrically beautiful animated short film, *Mona Lisa Descending A Staircase*. A recent arrival, Bart Goldman designed covers for the prestigious *New Yorker* magazine before he made a career change into computer animation.

"We hire creative people and we nurture them," explained Vinton. "Besides life drawing and storyboarding classes, we also cross-train—computer and Claymation animators experiment with each other's techniques."

A program called "Walkabout" (an aboriginal Australian custom of wandering the bush to take a break from the daily routine and to replenish the spirit) allows employees use of studio facilities and resources, money and materials, and up to 13 weeks of company time, to make short films.

Kirk Kelley's eerily seductive *Day of the Dead* is one current project. In the short film, LightWave-modeled wraiths with animal masks commune with the denizens of a small, south-of-the-border graveyard. Kelley has tapped talents from all departments to sculpt the surreal cemetery, to ply the peasant people, and to model the graveyard ghosts.

The company also offers the use of studio facilities for artists to develop independent projects in their spare time. Two recent LightWave films are Kirby Atkin's *Mutt* featuring a canine stand-up comic cracking jokes about his master and Gesine Kratzner's *The Trap* (image on next page), telling a gentle story of a violin playing pied piper.



Will Vinton Studios encourages its animators to work on personal projects to increase their skill levels, creativity, and ideas. This image is from a personal animation by Gesine Kratzner, an animator and director for Will Vinton Studios.

cent CG, though that's too much for the budget."

To complement and extend the live-action sets, Bailey has modeled in LightWave a virtual inner-city neighborhood complete with grime, graffiti, and a HUD office with a new sign every episode. This week's reads, "Tax dollars working so you don't have to."

To illustrate how seamlessly LightWave combines with the stop-motion sequences, Bailey displayed a blue screen shot given to him by the stop-motion team. Calvin, Goodie's 12-year-old buddy, has become entangled on an antenna on the roof and is dangling over the side of the building. The set includes the top of the roof with Calvin attached to the antenna. Because the camera angles down on Calvin, Bailey had to model the side of the building and the street below.

Complicating the shot, the stop-motion camera moves to reveal Calvin's precipitous position. Bailey had to mimic this camera movement with the camera in the LightWave scene. Then to heighten the Vertigo effect that director John Payson (*Joe's Apartment*) wanted, Bailey extended the camera move beyond the original.

Calvin's shadow was added to the virtual wall and film grain was applied to the LightWave scene to match the stop-action sequence that was shot on 35mm film. When everything is composited in Digital Fusion, you can't tell where the "real" ends and the LightWave begins. "With these tools, it's just obvious that this is the way to do the shot," Bailey said.

The production team is also using Magpie to assist in lip syncing. Miguel Grinberg, who developed this popular tool, moved in January from Buenos Aires to become the software programmer at Vinton.

He's been creating proprietary LightWave fur and clothes simulation plug-ins. He's also written a render farm program to run the studio's 50 Alpha machines. Grinberg's constantly busy at Vinton designing programs "that make the animator's life easier." He said Magpie Pro should be out of beta soon.

Live from Portland

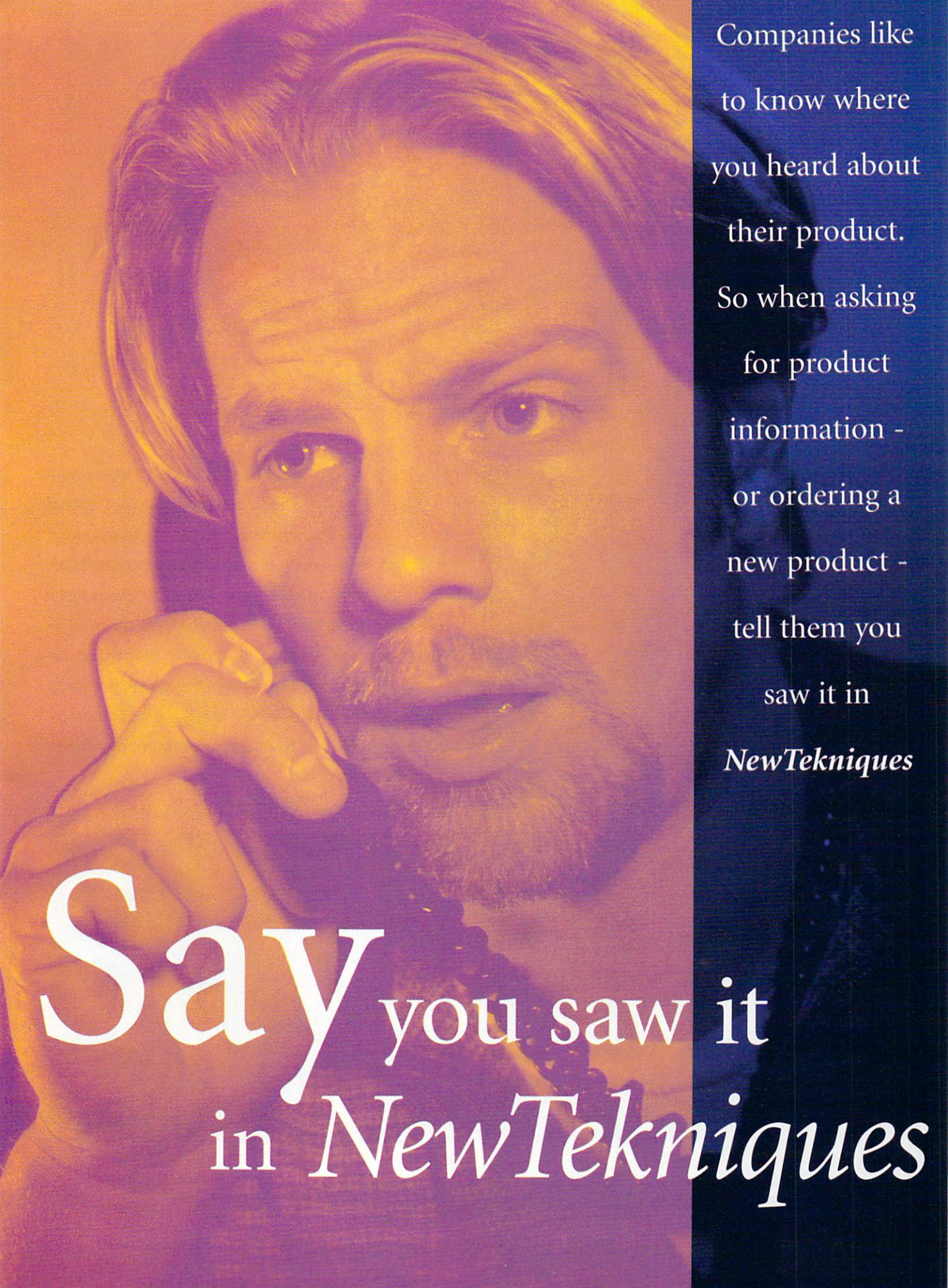
"I think animators have a tendency to think in short stories," said Vinton, describing why he thought "Klay's TV" was a perfect vehicle for his staff. "We're gag oriented."

"Klay's TV," a pet project for Vinton over the last few years, "is 'Saturday Night Live' but animated," according to Mike Wellins, animation director and writer. "Will always wanted to do sketch TV." The premise of the show is that Klay has tapped into a super cable system that delivers the apocalyptic 500 channels of non-stop programming.

Couch potatoes, Klay and his faithful dog spend their days surfing past programs like "Alien Vasectomy" and "Terminally Ill Bob." Right now, between 10 and 15 animators are working on the pilot to the prime time series. "Fox has first look rights, but they don't own the show," Wellins said.

"We're planning 30 skits in 22 minutes," Wellins said. "Since he's changing channels, we don't have to have a consistency of style. So we're mixing stop motion with LightWave with Claymation."

This integration of techniques and style serving the story and characters has become a defining process for Will Vinton Studios as it heads into the millenium.



Companies like
to know where
you heard about
their product.
So when asking
for product
information -
or ordering a
new product -
tell them you
saw it in

NewTekniques

Say you saw it
in *NewTekniques*

Seeing the Dimensional World

By Daniel L. Smith

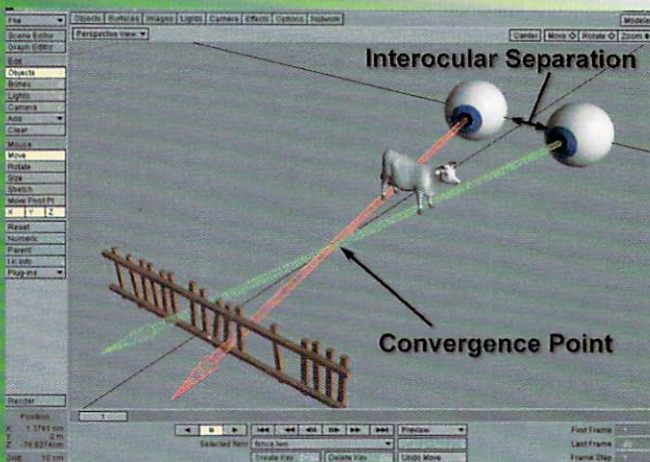


Figure 1
Stereo 3D rendering requires that you set up a point of convergence to compose your scenes.

We are familiar with the term 3D animation and LightWave 3D, yet these dimensional artifices of digital splendor are almost always viewed in a 2D flat medium such as film or television. We have the power to create multiple views of anything that we conceive by simply moving the camera and pressing F9. What if these multiple views corresponded directly with the views that each of our eyes see of the world? This is what 3D stereoscopic rendering has to offer us, a truly unprecedented view of 3D graphics.



Figure 2
Make sure that your camera and convergence are parented to the Camera Master Null.

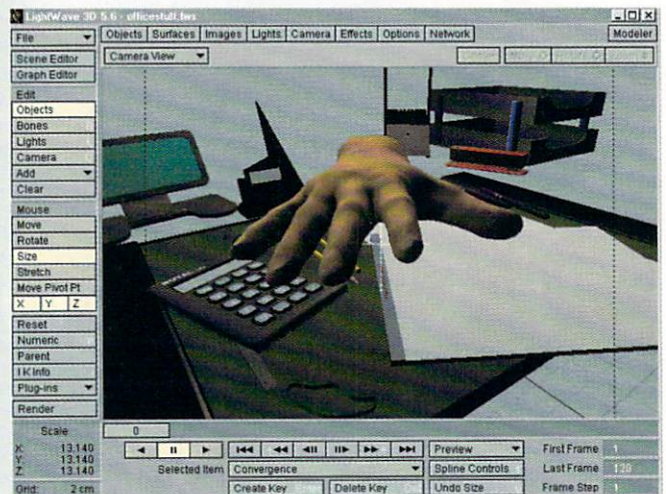


Figure 3
The hand will leap off the screen if the convergence is placed behind it.

Seeing in 3D depth is an experience to behold. You can almost touch and sense an object levitating before your eyes. It is pure magic. In this tutorial you will learn more about the 3D stereoscopic rendering option in LightWave 3D 5.6 and you will open your eyes to the new world of the third dimension.

Our brains think in 3D. We judge distances and reach for everyday objects based on the fact that our brains are constantly processing two distinct views of the world around us. These two views, one from each eye, are fused into a stereo image that our brains perceive as 3D. This depth perception can be recreated photographically by taking two pictures with an offset equal to the distance between our eyes. This distance is called "interocular separation".

Interocular separation can be adjusted up or down to scale the apparent size of the objects being photographed. In 3D, a miniature of a spaceship will look like a miniature if it is photographed with the average human eye separation of 65mm. This is because the relationship of the different parts of the object to each other does not correlate correctly to the size of the viewer. To overcome this, we must scale the viewer's eye separation down to match the scale of the ship, say 5mm or less. This gives the effect of a small viewer observing a large ship as opposed to a large viewer observing a miniature ship. If an object being photographed is very large, like mountain range viewed from an airplane, you must scale the interocular eye separation to more than 1,000 meters to accentuate the 3D depth.

Another important element to 3D is the point of convergence. This is the point in space where the line of sight from both eyes converge before diverging out again. In 3D composition, this point serves as a reference to where objects will recede "into" or pop "out of" the picture (Figure 1).

In order to use LightWave's stereo features, we need to set up the camera to include the convergence. Open up the demo scene \scenes\demo\officestuff.lws. I chose this scene because it has a lot of clutter. Clutter and detail add to the sense of 3D depth. If you render a 3D image with a plain backdrop, your

eye will have no reference to place the objects in visual space. Adding details allows your mind to increase an object's visual punch.

Once the scene is opened, add two null objects. Rename the first null "Camera Master" and the second null "Convergence." Now



HANDS-ON NEWTEK AUTHORIZED TRAINING

taught by Bob Anderson

S
C
H
E
D
U
L
E

LAS VEGAS

Jan. 16-18 LightWave 3D Essentials
Jan. 19-21 Advanced LightWave 3D Techniques
Jan. 22-23 Advanced Compositing Techniques
Jan. 24-25 Organic Modeling & Character Animation Essentials
Jan. 26-27 Intermediate Organic Modeling & Character Animation

MIAMI

Feb. 22-24 LightWave 3D Essentials
Feb. 25-27 Advanced LightWave 3D Techniques

DALLAS

March 8-10 LightWave 3D Essentials
March 11-12 Advanced Lighting & Camera Techniques
March 13-14 Advanced Surfacing Techniques
March 15-16 Advanced Compositing Techniques

NEW YORK CITY/NEW JERSEY

April 27-29 LightWave 3D Essentials
April 30- May 2 Advanced LightWave 3D Techniques
May 3-4 Organic Modeling & Character Animation Essentials
May 5-6 Intermediate Organic Modeling & Character Animation

SEATTLE

June 8-10 LightWave 3D Essentials
June 11-13 Advanced LightWave 3D Techniques
June 14-15 Advanced Lighting & Camera Techniques
June 16-17 Advanced Surfacing Techniques

TOPEKA—Discounted Prices

June 22-24 LightWave 3D Essentials
June 25-27 Advanced LightWave 3D Techniques
June 28-29 Advanced Lighting & Camera Techniques

Toaster Flyer Workshops in Topeka

- ▶ **How To Get The Most Out Of Your Toaster**
March 22-26 • May 17-21
- ▶ **Flyer In Production Essentials**
April 9-11 • June 4-6



WASHBURN UNIVERSITY

Division of Continuing Education • 1700 SW College • Topeka, KS 66621
(785) 231-1010, ext. 1399 • FAX (785) 357-0871 • E-mail: zzdpc@washburn.edu

www.washburn.edu/ce/newtek

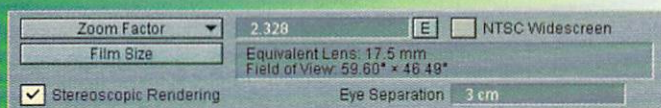


Figure 4
Don't forget to enable Stereoscopic rendering. Experiment with the Eye Separation values.

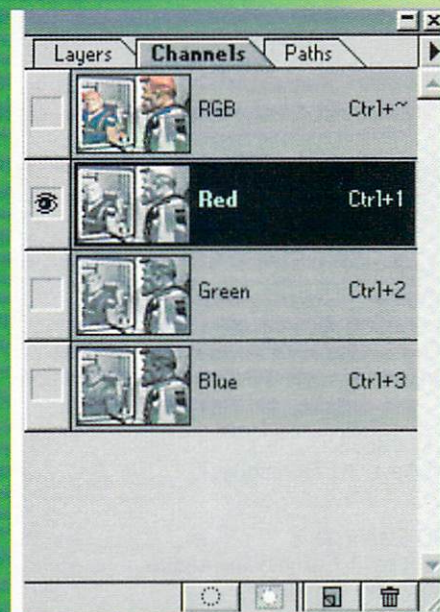


Figure 5
Select and copy the left image red channel and paste it into the right image red channel.



Figure 6
Notice how the hand floats and the background recedes into the frame.

select the Camera, and press "m" to go into the motion graph editor. Save your motion as "cam-temp.mot." Now clear the motion, and exit the graph editor. We have just cleared all motion from the camera but have backed up the motion as cam-temp.mot.

Disable the X, Y, Z translation channels, and the Pitch and Bank from the camera's controls. Only Heading should be enabled. Now parent the camera to the "Camera Master Null" and set its target to the "Convergence Null." Next select the "Camera Master Null" and depress the "m" key to load the motion graph. Now load the "cam-temp.mot" file that we saved earlier, and exit the graph editor. Now the original camera motion has been applied to the null that has the camera parented to it. The last thing to do is to select the "Convergence Null" and parent it to the "Camera Master Null" and then move it away from the camera **only** on the Z axis. Make sure that your camera set up is like Figure 2. Your camera view should look just like it did when you first loaded the scene. You should re-save the scene as "3D-test.lws". This is the standard way to set up your camera for stereo. Setting up this way gives you maximum control over the convergence and your 3D composition. We are now going to load an object to pop out and "grab you."

Load /objects/human/hand.lwo and scale it to 0.7.

Set the object position at:

x: -6.67cm

y: 9.5 cm

z: -7.38 cm

Set rotation on Heading to 27 degrees.

Create a keyframe at 0 for the hand. Now we need to set up the convergence. The convergence is the point at which objects seen on the viewing screen (monitor, TV, movie screen, or photographic print) appear to be on the plane of the viewing screen. Anything that is behind this point will recede into the viewing medium and anything that is in front of this point will jump off the screen and appear to come out of the picture.

We need to set our convergence to be just behind the hand. Since we made the convergence a null that is tracked by our camera, this will be easy. Select the convergence null and set a keyframe for it at 34.8 cm on Z. Do not move the convergence null on any other axis except Z; if you do you will create a picture that your brain cannot resolve and it will give you headaches. You have been warned! Also, anything that is in front of the convergence point should not extend beyond the edges of the frame. This is called "breaking frame." Breaking frame when an object is popping out instantly destroys the illusion of 3D, as the object will appear to be both extending "out" of the frame and at the same time hidden "behind" the frame. Our scene should resemble Figure 3.

Adjust the "Lamp" light to have a cone angle of 45 degrees and a 15-degree soft edge angle. Under the camera panel enable "Stereoscopic Rendering" and use an eye separation of 3 cm (Figure 4). Now render your images and save them to disk. We could use the "LW_Anaglyph_Stereo_Composer" plug-in, but this would give us a

regular left eye rendered image and a right eye red/blue anaglyph image. This would limit our option for viewing our image in other 3D formats. The "Simulate" image filter plug-in fakes a true 3D image and is not very useful either.

Now that you have rendered your left and right eye, we can talk about the different ways to view 3D images and animations. These include anaglyphic, free view, cross-eye, multiplexed video, LCD shutter glasses, and polarized film projection. The easiest to do is anaglyphic, and all you need is the LightWave plug-in, Adobe Photoshop, or a compositor such as Digital Fusion. The LightWave plug-in "LW_Anaglyph_Stereo_Composer" does it all for you but you cannot use any other viewing method unless you re-render the frames without the plug-in.

To create an anaglyphic image using Photoshop, load both left and right images, and desaturate all color from each image. You can do this by selecting image/adjust/hue-saturation, then move the saturation slider all the way to the left. This will turn your images into black and white but still will give you the RGB channels you'll need in the next step. Now select only the red channel from the left image, and copy and paste it into the red channel of the right image (Figure 5). We could write an action script to automate this and batch process an animation,



Figure 7
In this picture, notice the depth that is in the flat surface of the mirror.

The 3D Bug Collection for LightWave Animators

Collection includes: Ants, Bees, Fleas, Flies, Maggots, Mantises, Mosquitoes, Roaches, Scorpions, Spiders, Termites (Queen, Soldier, Worker)

Supports LightWave 5.0 to 5.6
(Supports Inspire 3D with some limitations)

Walking, flying, crawling, jumping, and biting scene files

Designed to use LightWave's Full-Time Inverse Kinematics to prevent feet from sliding

Custom image and bump maps

Some bugs with particle line and polygonal hair

Only \$149.95



1-800-350-5376

sales@dimensionalexpressions.com
www.dimensionalexpressions.com/3DBC.htm

LightWave and Inspire 3D are registered trademarks of NewTek Inc.
"The 3D Bug Collection" and 3DBC are trademarks of Dimensional Expressions.

WORLD CONSTRUCTION SET 4

IMAGE FROM THE LOST ISLAND OF ALANNA ©1998 THE COCA-COLA COMPANY

BRING YOUR GAME TO LIFE

with World Construction Set 4! Accurately render real places and magical imaginary worlds. Import, place, animate and render 3D objects directly within WCS 4. Add roads, bridges, buildings, vehicles and characters to make your scene come to life! Integrate with LightWave, Inspire and MAX.

303.659.4028

WWW.QUESTARPRODUCTIONS.COM

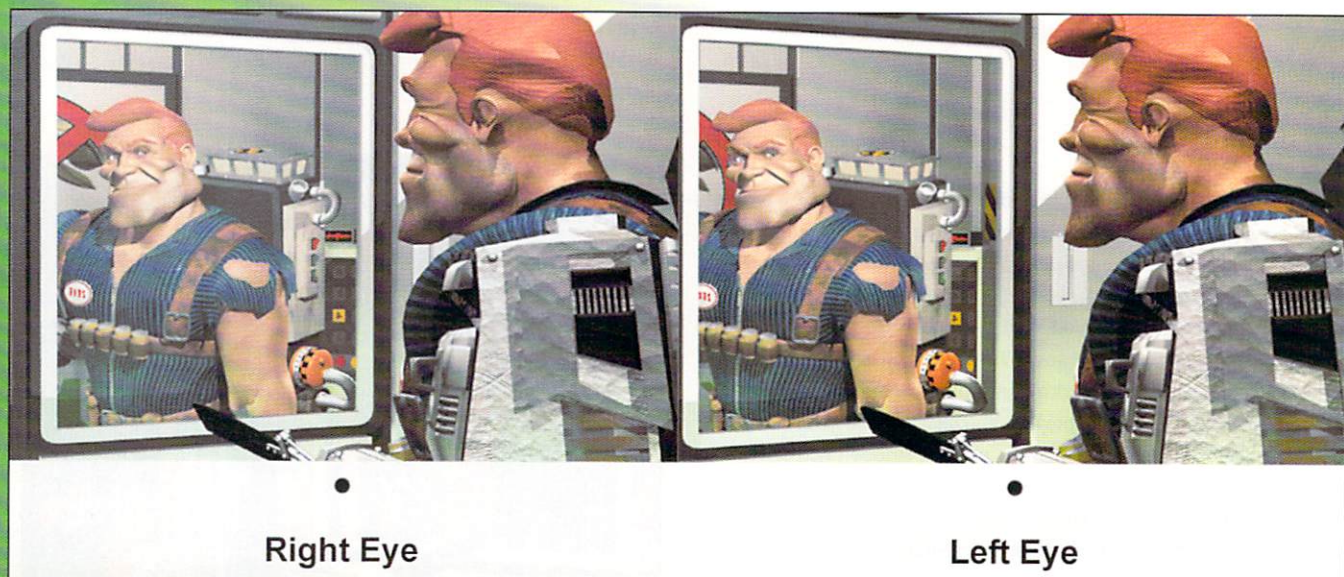


Figure 8

Cross your eyes and try to focus on the center image. Use the dots under each image to help you.

or we could use a compositing program like Digital Fusion or After Effects to swap the red channels. Your finished image should look like a double exposure with a red edge and a cyan edge. When you use red/blue or red/green glasses to look at this image, the hand should look as if it is floating in front of the screen, and the desk is receding into it (Figures 6 and 7). This method works well but lacks the color fidelity of the original images.

This brings me to free view and cross-eyed viewing. In free view, both the left eye and right eye are placed side by side. You stare at the images diverging your eyes until you see the picture in 3D. When doing this you become wall-eyed. Cross-eyed viewing is done by crossing your eyes and then relaxing their focus as you focus on the middle blurry image. If successful you will see a crystal-clear, full-color 3D image. Not everyone can focus like this (Figure 8). Cross your eyes, then try to relax focus on the image in the middle. Try to align the dots under each image and overlap them in the middle. Also move the image closer and further away to help focus.

In Will Vinton Studios M&Ms 3D film, we used a polarized process to see the 3D images. When the film is projected, each frame for the right and left eye is separately polarized by a polarization filter. The polariza-

tion is vertical for the left eye and horizontal for the right eye. When the projected image hits a special silver screen that keeps the reflected light polarized, it is bounced back to our eyes. The light passes through the glasses, which are polarized in the same manner as the images being projected.

Both the right projected image and the right lens of the glasses have vertical polarization so we see the right image clearly with the right eye. Since the left lens of the glasses has horizontal polarization, the right image's vertical polarization cannot pass through. This will block the right image from the left eye. The process is exactly the same for the other eye except the polarizations are switched. Polarization is expensive but is the most widely used system for ride films and themed attractions.

Finally, we have LCD shutter glasses, which can sync to a video tape, PVR, or a computer screen. Vrex, Inc. (www.vrex.com/) sells an excellent and affordable pair of LCD shutter glasses that can be used on any NTSC device or computer. At \$99 the VR Surfer pack comes with one set of glasses, video hookups, computer cables, and software to multiplex images together. These glasses use liquid crystal diodes to alternately black out each eye 30 times per second. This can cause some severe flickering in a bright room but is tolerable in dim light. The infrared emitter that synchronizes the shutters can be placed on a Perception or a video tape recorder.

For each frame of video, the left eye is placed into field 1 and the right eye into field 2. This way you can get stereo 30 frames per second by using the video's 60 fields per second—each field is used as a separate frame bank. You will need a way to process the right and left images and get them into the separate fields, a process called "multiplexing." You could use a batch processor like ARRIBA or use Digital Fusion to get the images multiplexed, but there is a simple way to do it in LightWave.

Open a fresh LightWave scene and load your right and left image sequences. Now go into Photoshop and create an image that is 720 x 480 pixels. (This is the PVR's resolution; you may have to experiment if

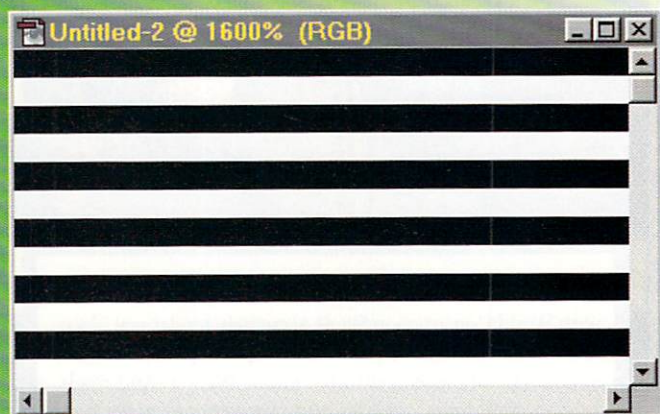


Figure 9

Make sure that the image starts with a row of black pixels.

you do not own one.) Now paint a single pixel-wide black line across the top row. You may have to zoom in all the way to be accurate. Grab a selection of the line on top with a single pixel-wide row of white under it. Under the Edit menu define this as a pattern and choose the Paint Bucket tool. Toggle its options to use the "pattern fill," and fill the image. You should have an entire image of alternating black-and-white pixel rows (Figure 9) Now save this image as Plex.iff.

Go back into LightWave and load the Plex.iff image. Now go to the effects menu and the compositing tab. Your left image sequence will go in the background and your right image sequence will go in the foreground. Load the Plex.iff image into foreground alpha and be sure to toggle the foreground fader alpha on (see Figures 10 and 11). Be sure to set your camera resolution to 720 x 480. Now render your sequence and load it onto a Perception or send it out to tape. Since every other line alternates between left and right eye images, the video will interpret this as fields and your Vrex glasses will give you 3D!

Will Vinton Studios' "The M&M's Las Vegas Adventure in 3D" was the springboard for launching LightWave into the realm of stereoscopic 3D. With this nine-minute CG and stop-motion film, we had to create 14,000 frames of stereo animation. The 3D process presents several cinematic problems. Motion blur has to be set fairly low—too much and the perception of 3D is reduced. Depth of field cannot be used because everything in a 3D scene should be in clear focus. The eye will wander even with a strong focal point. Just like in real life, your eye will wander and focus on everything it can. In a 3D scene if something cannot be focused on, it destroys the illusion of depth and hurts your eyes. Also, the 2D "cheats" that we are accustomed to using, like front pro-

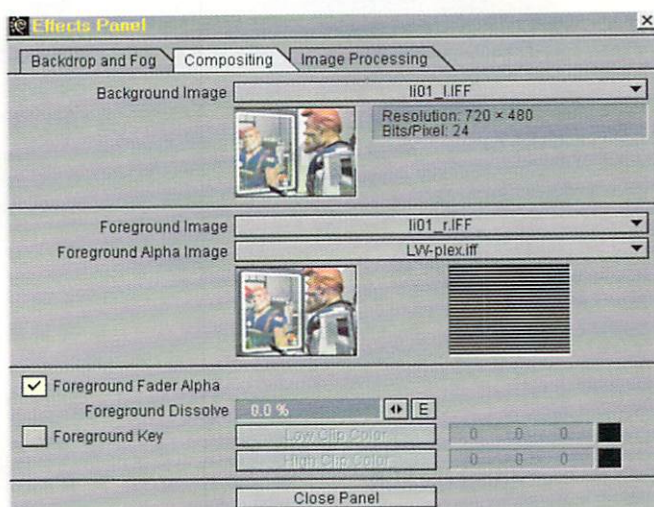


Figure 10
This will integrate the left images into the right images. When viewed with Vrex glasses the results are amazing.

jection image mapping, 2D roto effects, and lens flares, look like flat cardboard cutouts in a 3D world. Stereoscopic 3D can be limiting to a degree, but when it is done right, it can be mesmerizing.

I hope this gives you a basic understanding of what is possible with LightWave's stereoscopic rendering feature. Stereo 3D is a treat to the senses that no medium other than CG can deliver with such ease. This is what the 3D in LightWave is all about, seeing the real world and the surreal worlds we create the way nature intended for us to see them.



Figure 11
Zeke has been Multiplexed. Every other scan line is either right or left eye.

Daniel L. Smith is a technical director and senior animator for Will Vinton Studios. He inherited his 3D DNA from his dad, a science teacher and an avid stereoscopic photographer. Smith grew up experimenting with his father's cameras and still keeps a classic Realist 3D viewer next to his desk. Smitten early on by Disney, special effects, and theatrical make-up, he attended the Pittsburgh Art Institute where he bought his first Video Toaster. He worked as a film effects animator on the East Coast and as a computer artist in Las Vegas before landing at Vinton, perfectly honed to be a supervising technical director on *The Lost 'M' Adventure*, the M&Ms 3D film. In this tutorial, he shared his extensive knowledge about creating stereoscopic images with LightWave. Smith can be reached at daniel@vinton.com or at his personal Web site at www.danimation.com/.



WAVE F/X

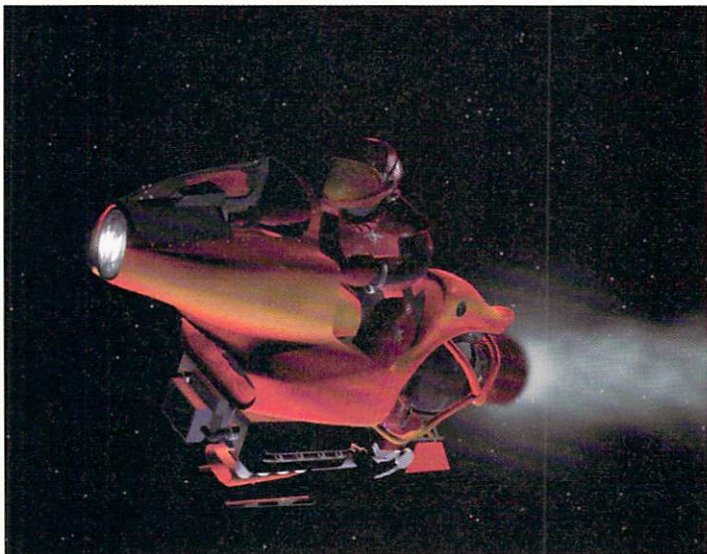
LIGHTWAVE SUCCESS IN THE COMPETITIVE TV & FILM F/X MARKET

LightWave 3D was able to turn one man's dream into a *Joyrider* reality.

BY
GREG NELSON

THE JOYRIDER DREAM

I moved to Hollywood to chase a dream. A buddy of mine was making a movie. That was excuse enough for me to break my lease and move down to Burbank from my little college town of San Luis Obispo, CA. He had a dream. It was pure, and that's all I needed.



Joyrider zooms through space on an adventure to just have fun.

It's been five years since we first rolled film. In those five years, so many things have changed. Now it's not about the dream, it's about squeezing in six hours of dreamless sleep or who screwed me over or am I going to get my rate on the next job. It's about business, not dreams.

If you are going to maintain your sanity in the entertainment industry, you must have a creative

outlet fueled by a dream. That's the driving force behind the short film, *Joyrider*.

"This one's for us," says John Van Vliet, the film's writer and director.

"I first started thinking about *Joyrider*, 18 or 19 years ago, when I was working on *Empire Strikes Back*," says Van Vliet. "It came from an old Harley ad that said, 'Learn to Fly, Twenty Eight Inches off the Ground.'"

With that, the story about a kid with techno-lust and a flying motorcycle took wing.

After seeing what he could do with the limited technology in the early 80s Van Vliet put *Joyrider* on the back burner. However, the idea and how to execute it continued to simmer in his mind.

His dream came back to the surface after the opening of the special effects company Available Light, which he co-owns with his partner Katherine Kean. "I built a model," he says, "and I started shooting tests on our Oxberry...I could see how it would look, and it

still wasn't right."

For those like me, who missed doing effects in the pre-CGI era, a model is something you can actually hold in your hand, and an Oxberry is a stop-motion animation camera that has sadly given way to megahertz, gigabytes, and software as a form of effects animation. So Van Vliet's dream again went on the back burner.

"Then came LightWave 3D. It changed everything," he says with a smile. For the first time, he truly had the ability to put what he saw in his head on the screen.

After finishing effect shots on the upcoming Disney release, *My Favorite Martian*, Van Vliet and company realized they had a little time on their hands. So he pulled out the storyboards he'd drawn almost 20 years ago, and went into seven weeks of production.

Seven weeks wasn't long enough, but despite the fact that *Joyrider* is still an unfinished project, it deserves recognition for many reasons. First, it is the perfect example of how to do some-

The characters in *Joyrider* have weight and timing—they perform.

thing right. I wish you could see the storyboards and model designs all nicely bound in a book, just sitting there for easy reference. 'On this page, here's what the bike looks like.' 'On the next page, oh hey, that's the robot.' There they are on paper, and there they are on screen, oddly, looking very similar.

How many times have you looked at a director's "storyboard" on the little post-it stuck on the side of your monitor, and just when you're about to begin modeling, you hesitantly ask, "Is...is this side up...or...or does it go this way?" Don't laugh, that happened to me last week.

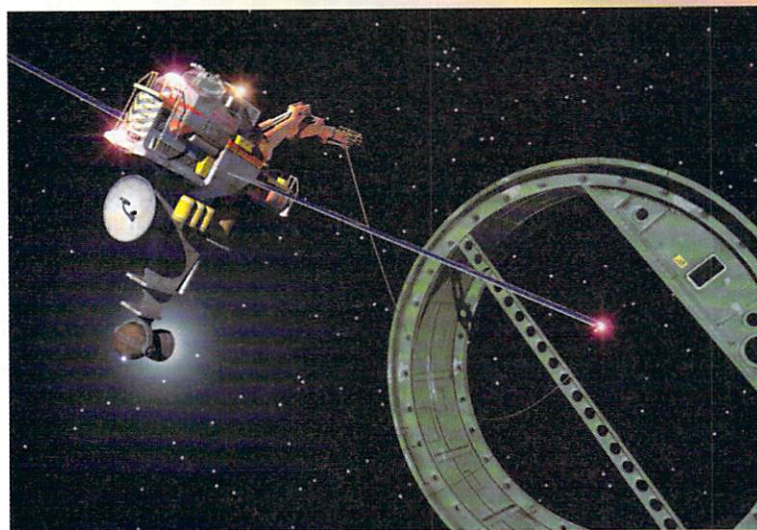
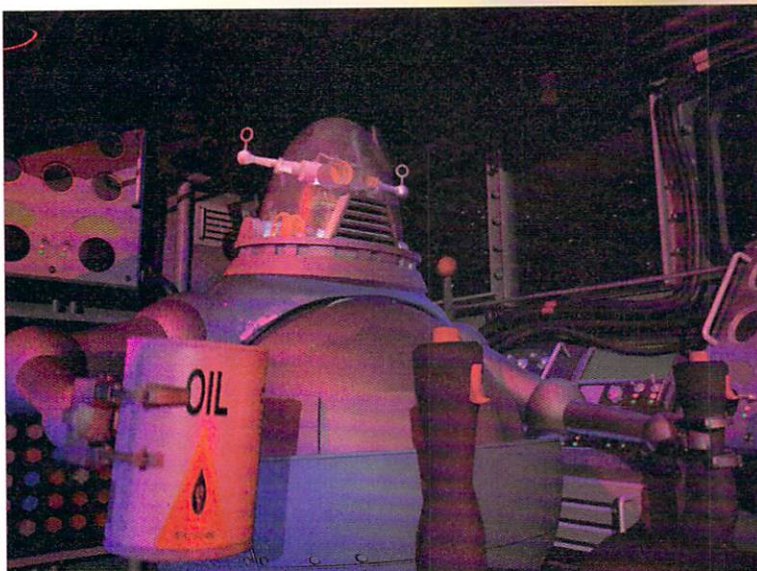
One of the most important parts of the *Joyrider* storyboards is the map. Van Vliet has taken the time to tape together a long sheet of sketches that, when unfolded, give visual reference to every plot point from beginning to end, making it very difficult to get lost. So, when an animator is working on a scene and the question comes up, "Hey, is the headlight on or off in this shot?" all the animator has to do is look at the map and the question is answered. "Oh yeah, it broke three shots ago, so it's off." I know that's a simple example, but giving your animators context regarding the larger picture is one of the best ways to free their creativity.

You can tell this is a labor of love when you spend time looking at the models. Van Vliet credits much of the film's look to his long-time friend and LightWave model builder, Bill Arance. Arance approaches his work with a passion.

I've worked with Bill before and one of his famous lines is, "How do you want the threads on the screws; metric or standard?" Bill is the type of guy who takes joy in knowing you can put the camera three feet away from his model and you can't tell if it's real or not. It is that type of passion for detail that sets *Joyrider* apart. The models are perfect.

The funny thing about making a film is if it doesn't work, it doesn't work. In the end, it doesn't matter if you've accounted for every detail in your planning. It doesn't matter if your storyboards are immaculate, or all your polygons flipped properly. If your characters can't deliver a performance of your script, all is lost.

When it comes to character animation,



A scene from *Joyrider*.

that is where *Joyrider* really shines. Character performance is much more about the subtlety of movement and the nuance of timing than it is about getting your points and polygons to move from point A to point B. It's clear that John Van Vliet understands this, because in the few shots I've seen, his characters have weight, they have timing and they have emotion; they perform.

His character's performance works largely due to the fact that Van Vliet is learning LightWave. I believe that in the near future we're going to see more animators and special effects artists rising through the ranks to take a directorial lead on large-scale projects. I believe this because our industry has changed dramatically over the last few years. No longer is filmmaking about just shooting for the edit, it is about shooting for the edit and the effect. If a director doesn't take the

time to at least understand an animation and compositing package along with its capabilities, it makes it very difficult for the director and all the people on the crew list to plan the shots. That's why *Joyrider* works, because Van Vliet understands his medium.

Hollywood is built on dreams. Some dreams are crazy and some are visionary, but they are dreams nonetheless. The advent of the desktop animation station is what John Van Vliet would call the "democratization of the digital age." It has leveled the playing field and given anyone with a dream and the desire to execute it the ability to do so.

Far too many people overestimate what they can get done in a year, but they grossly underestimate what they can get done in 10. It doesn't matter how long it takes you to bring it to life, if you have a dream living in your mind, now is the time, make it happen.



INNOVATIVE LIGHTWAVE 3D APPLICATIONS FROM OUR LIGHTWAVE MUSE

WAVES

Do you have the personality it takes to fit in with the LightWave 3D crowd?

BY JOHN GROSS

CAN YOU PASS THE TEST?

In the course of my LightWave 3D career, I've had the privilege and honor to work with many of the best LightWave artists out there. With few exceptions, I have witnessed similar personality traits among the cream of the crop and I thought it might be fun to pass them on to you so you can see if "you fit the profile." Since this is my first column in awhile, I wanted to take it easy and not get too carried away...oh, what the hell...get out your pencils and let's take a test!

Question 1: How often do you find yourself thinking, "I'm really proud of this work?"

- a) Always.
- b) A lot.
- c) Sometimes.
- d) Rarely.
- e) Never.

Perhaps the most shared trait among great LightWave artists is humility. I cannot think of a single, really good LightWave artist who is not humble. I can't tell you what a breath of fresh air this is in the whole Hollywood scheme of things. These LightWave artists are generally unsatisfied with their work...occasionally, when they do something really outstanding, they are kind of proud about it, but it takes a lot to make them really satisfied. This is one of those attitudes that helps them strive to create something better the next time and this is what helps make them great. Interestingly enough, when really good LightWave artists start losing this trait, they become, in my opinion, less of a good artist.

It's a nice system of checks and balances.

Here's Your Score:

a) 0 points—Nobody is always great. If you think you are, think again. If you think again and you really are, give me a call.

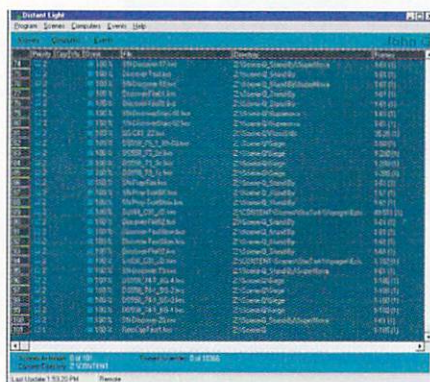
b) 1 point—You're deluded, pompous or really good! Chances are you're deluded and/or pompous. But please talk to me if you're really good!

c) 2 points—Sometimes is a good answer.

d) 3 points—Rarely is a better answer, hopefully because you're just not satisfied with your work and not that you're just really bad!

e) 4 points—Great score if you're choosing this because you are always pushing the limit. Bad score if you're choosing this because you're just really, really bad. If the latter is the case, you get points for at least knowing that you're really bad!

Question 2: If you're asked to share a technique you've created, you:



LightNet can be used as a ScreamerNet replacement.



QV 3.0 is a good render-display solution.

- a) Willingly show them your process and help them to understand it.
- b) Willingly show them your process, but not take time to really explain it.
- c) Politely tell them it's "proprietary" and not show them.
- d) Impolitely tell them it's "proprietary" and not show them.
- e) Wonder how they are going to use the information against you.

The second common trait is willingness to share techniques and ideas. I used to think that this came from the old strong community spirit of the "Amiga days." Now that LightWave is cross-platform, I still am seeing great artists show a willingness to share concepts with other artists and a genuine desire to see other artists do well.

Perhaps this is just a trait among LightWave artists in general? There's a good reason that there are more LightWave newsgroups and mailing lists online (at least with my provider) than any other package out there.

Your Score:

- a) 3 points—Good for you. You get good karma points, too.
- b) 2 points—Not as good if you're not taking time because you don't really want to share, but ok if you're just busy and don't have the time.
- c) 1 point—You didn't let the other kids play with your toys much, did you?
- d) 0 points—No need to be rude!
- e) -1 point—Points off for being paranoid. Chill out.

Question 3: You're under a deadline and a technique you thought would work, doesn't. You:

- a) Give up and go with a "lesser" technique.
- b) Look for guidance from a resource who may have more (or some) experience.
- c) Try a completely new technique.
- d) Buy a new plug-in and see if that will do it.
- e) Whine about how you can't meet your deadline because of the problems your software is giving you.

The third trait shared is resourcefulness.

Time and time again, I've seen artists come up against a wall regarding a technique and react in different ways. The good artists will know when they are going down a dead end and will adjust their thinking accordingly. Depending upon the deadline, they will either scrap it and start fresh with a new approach or they will try to incorporate some fresh ideas into the existing technique to make it work. In either case, they have the resourcefulness to know that a change needs to be made. The not-so-good artist generally will rely on somebody else.

Your Score:

- a) 2 points—Doesn't sound very exciting, but sometimes you just have to give in.
- b) 3 points—It's good to know when you need help.
- c) 4 points—This is the resourcefulness I'm referring to. If something doesn't work, try something else. Don't be afraid to R&D, but know when you have to move forward.
- d) 1 point—Bad choice when your deadline is approaching rapidly. You should have researched this before you started the project. You never know how well plug-ins will work and if it doesn't do the job, you've lost more valuable time.
- e) 0 points—Bad idea all around. Take some responsibility and come up with a solution instead of a problem.

Question 4: Do others think, in general, that you're a nice person?

- a) Yes.
- b) No.

I haven't met a really decent LightWave artist yet who wasn't a genuinely nice person. Period.

Your Score:

- a) 4 points
- b) 0 points

How'd You Do?

13 to 15 points—Congratulations. You have what it takes to be a great LightWave artist. Please send me your demo reel. I'd really like to see your work.

9 to 12 points—The potential exists for

greatness. Get your stuff out and about if you're looking for work.

5 to 8 points—Not looking so good. Your work may be top notch, but your personality sucks. Oh well.

0 to 4 points—Ouch! You're probably best off working with yourself!

There is one other trait that great LightWave artists share. They produce really nice work! Remember, if your artwork isn't up to par, most likely you won't get hired on your personality alone.

FXI

Finally, on the practical side of LightWave, I wanted to quickly bring up two great programs that will help any animator.

In the ScreamerNet department, try using LightNet as your ScreamerNet replacement. LightNet is a great Render Farm wrangler and allows you to move and prioritize scenes in the render queue as well as change settings for them. Additionally, you can remotely check on the status of renders and other computers on the network as well as verify scenes for missing frames. LightNet was created by Raf Schoenmaekers of Grid Productions in Belgium. The best thing about it is that it is freeware and can be found online at users.glo.be/~cd004066/Lightnet/. It will run on Intel machines under Windows 95/NT or on Alpha systems under FXI32.

In the Render Display department, try the new QV 3.0 by Ernie Wright. Not only does QV 3.0 allow you to view your latest rendered frame, but you also can view any of the three color channels, search for video hotspots, place text on frames, assign notes to images and view up to 10 different versions of an image. You also can see the Alpha channel (a great feature) and save a selected image in any of LightWave's formats. QV 3.0 sells for \$34.95 and can be obtained online from www.access.digex.net/~erniew/qv.html

John Gross is the co-owner of Digital Muse, a Santa Monica, CA-based effects facility. Contact him at john@dmuse.com or visit www.drmuse.com.

Tutorial

A STEP-BY-STEP GUIDE TO CREATING MORE PROFESSIONAL PRODUCTIONS

The magic of creating dust clouds and nebulae is only a few LightWave 3D steps away.

BY DAVE JERRARD

Creating Dust Clouds and Nebulae

In the June/July issue of *NewTechniques* I described an alternative method of creating laser effects in LightWave 3D. The space battle image that accompanied that article generated a lot of feedback over the past few months, including a few questions regarding the images

used to create the nebula in the background. How was it done? Where did I get the images that were used? Believe it or not, the only image used was a gradient grayscale! The rest is pure LightWave magic. So, without further ado, here's another technique to add to your effects directory.

1. Our first step is to create a panel that will become our nebula; however, we won't be using a flat panel as is so commonly done. Instead, we'll use a very shallow cone, which will be explained a bit later. For now, start Modeller and create a 1-km diameter cone on the Z axis, using the following settings:

Sides: 40
Segments: 1
Bottom: 0 m
Top: 1 m

Center Radii
X: 0 m 500 m
Y: 0 m 500 m
Z: 0 m 0 m

There will be one 40-sided polygon, which we don't need so delete it. Now open the

Surfaces Panel. Give this a surface name of Nebula, then activate the Double-sided and Smoothing options. Finally, save this object as NebulaPanel, then switch over to Layout.

2. Load the NebulaPanel into Layout and open the Surfaces Panel. The first thing we'll add is a base color. Nebulae tend to be either red or light blue, with pastel shades of green and orange mixed in. We'll start with blue here so click the Surface Color button and enter RGB values of 20, 65, 120. This gives us a good medium blue that's not too harsh. Also, lower the Diffuse Level to 0% and raise the Luminosity to 100%. Because nebulae are composed of high lev-

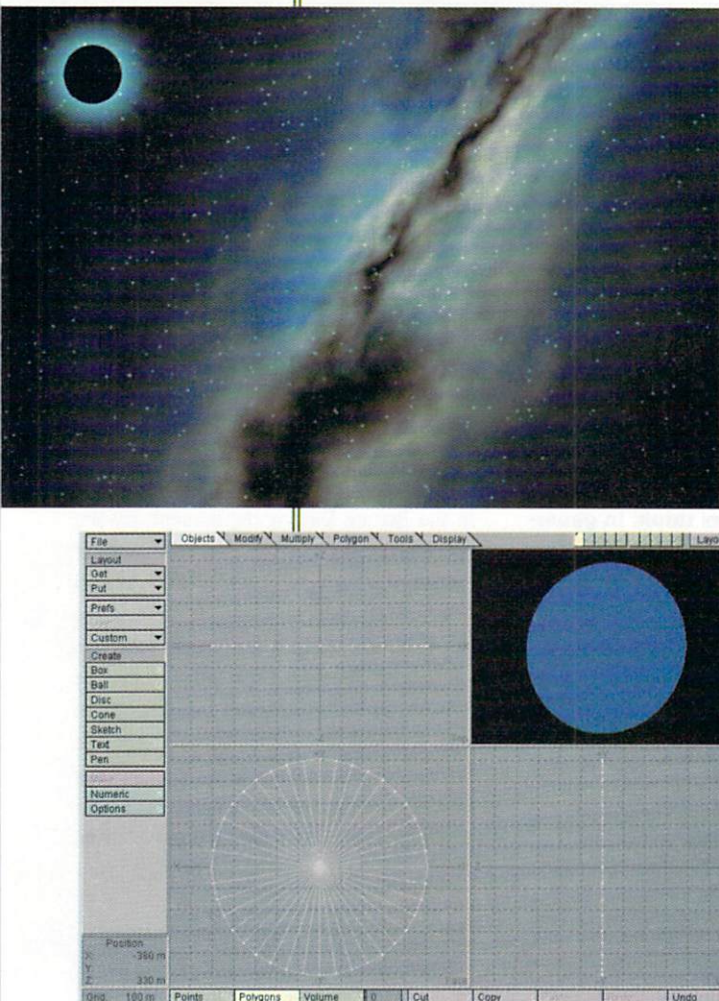


Figure 1. A very flat cone is the starting point for an interstellar dust cloud.

els of glowing gases, we'll need to activate the Additive option here as well.

3 To add some detail to this blue disk we just created, click the Texture button to open the Color Texture Panel. We could use a Fractal Noise texture here, but instead, we'll create a narrow nebula, complete with a dark dust band, similar to the famous Horsehead Nebula in the Orion constellation. To do this, we'll use the Marble procedural texture. The following settings will place a highly distorted horizontal vein through the center of this disk, which will become our glowing band of gas.

Texture Size	Center
X: 50 m	0 m
Y: 50 m	500 m
Z: 50 m	0 m

Texture Axis: Y axis
 Texture Color:
 65, 100, 120
 Frequencies: 3
 Turbulence: 0.2
 Vein Spacing: 1000
 Vein Sharpness: 4

Hit F9 to create a test render to see the effects this texture had on the surface (Figure 2). By using a Vein Spacing equal to the disk's diameter we keep the number of veins appearing to just one. The center point of

The Power is at your Fingertips

VertiElectric offers exciting opportunities for electrical effects that will enhance any image you create. This easy to use plugin has illustrated veins, trees, seaweed, lightning, electrical discharges, and much more.

VertiElectric offers All the electrical power you desire. Plug in to the Power! For more information visit our website: www.3dgfx.com

VertiElectric

Blevins Enterprises, inc.
<http://www.3dgfx.com>
Sales@3dgfx.com

1187 Alturas Dr. Moscow, ID 83843
 1 - 800 - 205 - 5161
 208 - 883 - 3805

Circle #208

say it

IN NEWTEKNIQUES

COMPANIES LIKE TO KNOW WHERE YOU HEARD ABOUT THEIR PRODUCT.
 SO WHEN ASKING FOR PRODUCT INFORMATION -
 OR ORDERING A NEW PRODUCT -
 TELL THEM YOU SAW IT IN **NEWTEKNIQUES**

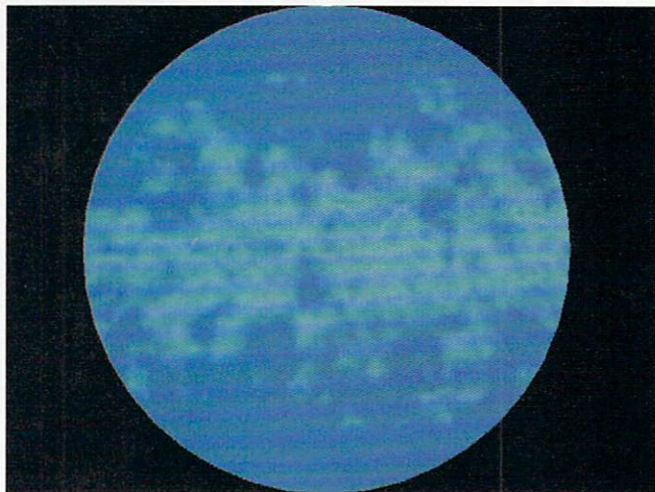


Figure 2. A horizontal marble vein adds the first few details to the nebula.

the marble texture falls directly between two veins, so to get one of the veins to pass through the center of the disk, we need to offset the Texture Center by half of the Vein Spacing value, thus the Y Texture Center of 500 meters.

4. We now have a marbled gradient that goes from a greenish blue to a dull blue. Now we want to add a more intense color and concentrate it near the center. Click the Add New Texture button and set up a second Marble texture. This time, the texture will have a higher Vein Sharpness, resulting in a thinner, more pro-

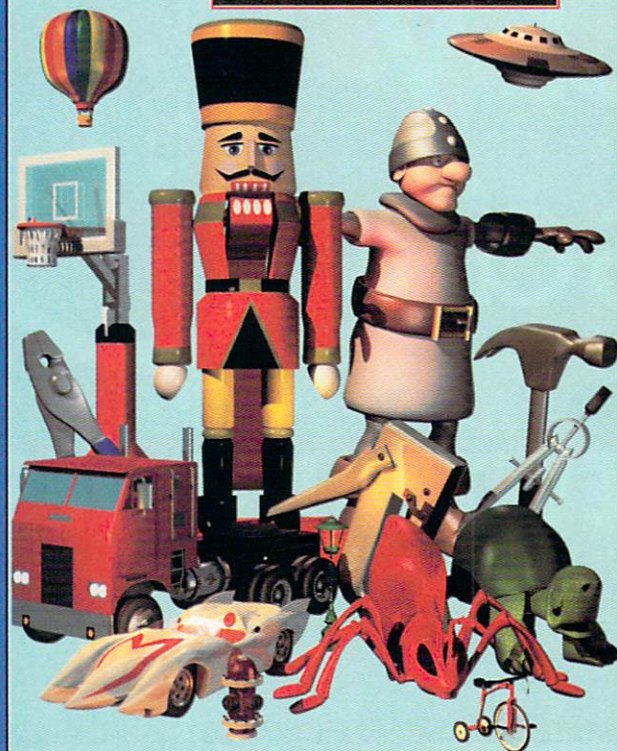
nounced, vein running over the original texture. Once again, the following settings will position a single vein across this surface.

Texture Size	Center
X: 60 m	0 m
Y: 60 m	-500 m
Z: 60 m	0 m
Texture Axis: Y axis	
Texture Color: 220, 200, 135	
Frequencies: 6	
Turbulence: 0.1	
Vein Spacing: 1000	
Vein Sharpness: 6	

Hit F9 again and you will notice the surface is taking on a more gaseous appearance

Model Library

LWO • DXF • 3DS



Over **550** High Quality 3D models
for **\$.46** each?

Impossible you say?

Tired of paying inflated prices for quality 3D models? The epic software group is now offering a library of over 500 royalty free 3D models and is selling the entire library for what you might expect to pay for a single model from the other guys! There's more. The 3D models on this two CD set come in three file formats: **.LWO**, **.DXF** and **.3DS**. The LightWave/Inspire models are fully textured and ready to go. This library also includes a handy viewer to preview each model.

Want Proof?

How about some **Free** Samples?

Just point your web browser at: www.3dinteractive.com. You can own this library for only \$249.95 plus \$19.95 for shipping and handling. Order today by calling epic software at **281-363-3742**.

(Figure 3). By increasing the Vein Sharpness we're able to control the width of the veins somewhat. Because the marble texture is very similar to the first texture, our vein will closely follow the first one. If we layer progressively sharper textures in this fashion, we can add multiple colors that will follow the same path, creating a striped vein effect.

Note: Feel free to use the Texture Opacity to adjust the intensities of the textures. In Figure 3, the second texture is applied with a 60% Texture Opacity to help blend the two textures together.

The nebula is nearly finished. All that's left is to soften that hard edge to allow the panel to blend into the background and look natural. Once again, we can use the marble texture for that. This time, we'll add it to the Luminosity channel.

Texture Size	Center
X: 70 m	0 m
Y: 70 m	510 m
Z: 70 m	75 cm

Texture Falloff
X: 0%
Y: 0%
Z: 150%

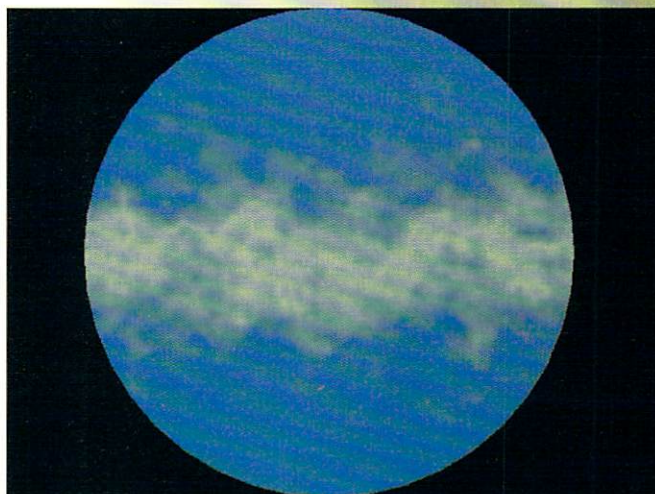
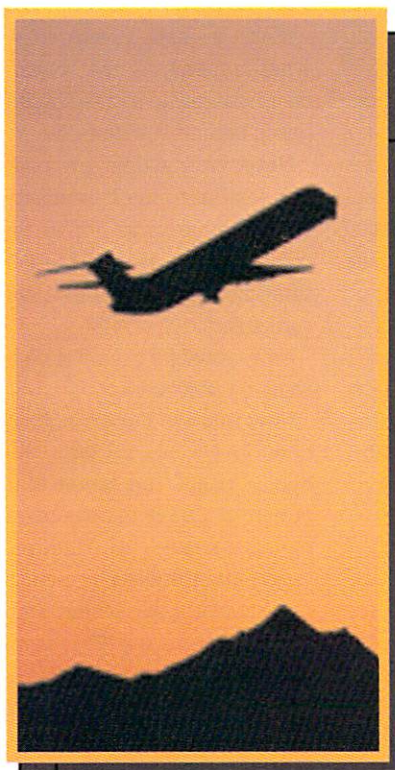


Figure 3. A second marble layer enhances the look of the nebula.



Co-Pilot Audio & Co-Pilot Video

"Just the kind of tools we need for flying"

"Things are so much faster, I'm going to up my editing rates!"

"Co-Pilot Video cut 6 gigs of waste from my project! That's like having an extra hard drive!"

"I cut 300 stills to a music track, then added 300 transitions with one click."

"Co-Pilot Audio is just what I needed to make mixing a breeze."

"Aussie's audio ramping saved me hours and hours of work."

"Wow! The time I've saved with Co-Pilot... my wife thanks Aussie!"

"A truly satisfied user with a couple of great Co-Pilots."

OZware

21230 Meadow Lake Rd., Snohomish WA 98290

(360) 805-0148

ozware@aol.com www.vionline.com/ozware

Texture Axis: Y axis
Texture Value: 100%
Frequencies: 6
Turbulence: 0.05
Vein Spacing: 1000
Vein Sharpness: 2

Before these settings will be noticeable, we'll need to turn the base Luminosity back to 0%. We raised it in Step 2 in order to see the textures as we applied them, but now that

we've actually applied a texture to the Transparency channel, we need to lower the base value again. Another test render will show that the top and bottom of this disk are now black. We've just added a very wide, luminous, marble vein through the center, using a Vein Sharpness of 2 to lighten the veins through the center. This luminous vein is also just wide enough to illuminate

some of the base blue color as well (Figure 4).

You'll also notice that we used a falloff on the Z axis. Since this object is actually a cone with a distance of one meter from tip to base, a falloff along the cone's axis will have a radial effect when viewed face-on. We centered this luminous texture near the point of the cone, leaving 75 cm between the Texture Center and the base. With a Falloff of 150%, the texture becomes invisible at the base. Usually, a falloff on the X and the Y axes would be used, but our texture center has been offset on the Y axis in order to align the veins. Since the falloff is always calculated from the Texture Center, that would cause it to start from the top of our object instead of the center. Also, by using the slope of the cone in this way we can avoid the diamond-shape artifact that occurs when a falloff is applied to more than one axis.

Texture Size	Center
X: 70 m	0 m
Y: 70 m	500 m
Z: 70 m	0 m

Texture Axis: Y axis
Texture Value: 100%
Frequencies: 6
Turbulence: 0.05
Vein Spacing: 1000
Vein Sharpness: 10

You'll notice this time we used an even higher Vein Sharpness than before. This will tighten the texture even more than the other textures we've applied, creating a much narrower vein through the cloud. Because this vein is completely transparent, no color from the other channels will be present, resulting in what appears to be a dark cloud obscuring some glowing gases behind it (Figure 5).

Note: We could have applied this texture to the Luminosity, with a value of 0%, or to the color channel as a black texture layer, and achieve the same results.

Now would be a good time to save the object.

Now that we have a nebula, how do we use it? With this nebula panel, the secret is in numbers. Two or more of these panels, scaled to different sizes and stretched on their X axis should be somewhat overlapped (Figure 6a). This overlapping will allow the textures to combine, and since these are additive, they'll become brighter where they overlap. Endless patterns are possible by creating small groups of random-size panels and plac-

6. Our nebula can be used as is, but there's still a lot we can do to improve its appearance. Several nebulae have dark areas of dust that blot out everything behind them. In fact, these dust belts make for some of the most interesting stellar phenomena we've seen to date. Once again, we can use the Marble texture to add a dark band across our nebula. This time we'll apply it to the Transparency channel.

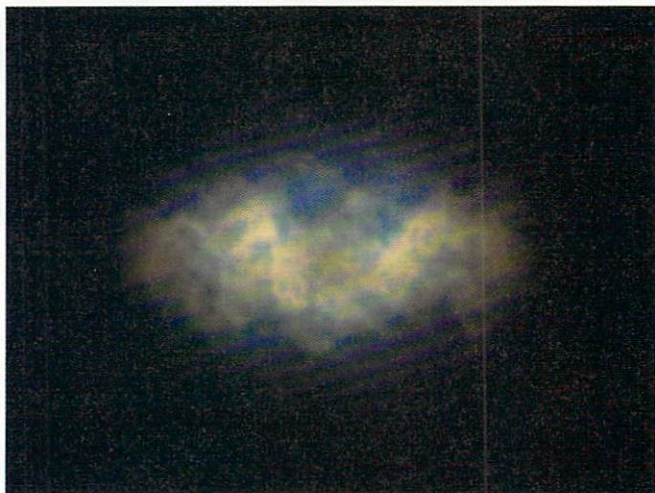


Figure 4. The entire luminosity of the nebula is controlled by a third marble texture. Note the soft "feathered" edge all around the circumference of the object.



Figure 5. The addition of a dark band finishes the look of our nebula.

ing these in the background of your space scenes.

Note: When adding starfields, it's a good idea to give your stars an additive surface, particularly if you use a texture to create a range of magnitudes. This will prevent dimmer stars from appearing as dark dust specks when seen against a lighter background. It's also a good idea to make sure your stars are 0% diffuse, otherwise they tend to look too large. By turning off the diffuse level, they will render with a softer edge, which makes them look smaller.

If some panels become too bright, they can be dimmed by simply dissolving the object partially.

1. Now that we've created a bluish yellow nebula, try experimenting with the colors. Nebulae literally come in every color of the rainbow, but the most common are blues, oranges and reds. The Orion nebula for instance, is an intense red while the Pleiades star cluster is shrouded in a light blue cloud. For the red nebula as seen in Figure 7, the basic surface color is the same, but the first marble texture has RGB values of 255, 5, 65 and the second texture uses 255, 75, 75. The rest of the settings are identical.

We're not limited to using marble textures on these panels. In fact, fractal noise or even image maps can be used

and still benefit from the radial falloff we achieve through the use of a cone. All that needs to be done is to center the image or texture at the cone's point, which is at 1 meter on the Z axis. An image should be mapped on one of these panels on the Z axis. A falloff of 100% also should be applied to this axis to provide a soft radial falloff effect. This will allow the image to blend into the background seamlessly (Figure 8).

This is just a small sample of some of the effects that can be achieved through the use of an inclined surface like our nebula panel. Other effects that can be created in a similar fashion range from simple curved surfaces to waves crashing on a beach, both of which are detailed in *LightWave 3D Applied*. For now, experiment with various settings and see what other effects you can create with this trick.

Dave Jerrard is the lead tutorial writer for *NewTechniques* magazine, as well as one of the authors of *LightWave 3D Applied*. For more techniques like this one, look for *LightWave 3D Applied* and be sure to check out his Web site at www.gsidigital.com/dj as well as the *NewTechniques* Web bonus section.

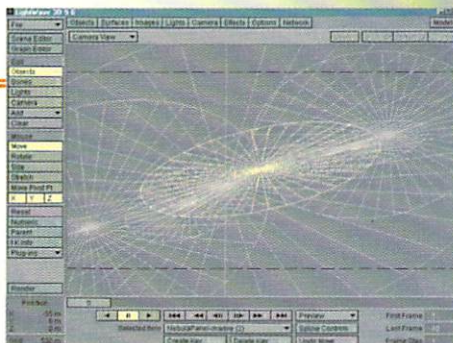


Figure 6a. A daisy-chain of different sizes of nebula panels as seen in Layout.



Figure 6b. The same daisy-chain when rendered appears quite different from the basic individual objects. Note how the nebula takes on a sense of depth, particularly in the far left.



Figure 7. Two different colors of nebula panels side by side.



Figure 8. An image may also be mapped on a panel and benefit from the radial falloff effect, as shown here. The nebula on the left does not have the falloff applied.

Tutorial

A STEP-BY-STEP GUIDE TO CREATING MORE PROFESSIONAL PRODUCTIONS

Web site banners are everywhere. With Aura, you can add to the congestion!

BY
WILLIAM C. VAUGHAN

Building A Better Banner



Fire up your Web browser and instantly you will be besieged with banner ads. Some banners serve as informational headers while others are unrepentant advertising links. For your banner design to click, it better quickly captivate the eye and interest of the viewer. This tutorial will show you how to put together a banner using Aura that will wow even a hardened Web surfer. Why, might you ask, should you take the time to learn this skill? Simply put, researchers predict that online advertising will be a \$5 billion market by the year 2000!

To improve the efficiency of your Web banners, I have included several guidelines. The Standards and Practices Committee of the Internet Advertising Bureau has identified 468 x 60 pixels as the most commonly accepted size for a full banner. Refreshing banners often on a site is important. In fact, Yahoo! suggests that banners burn out after two weeks. Yahoo! also indicates phrases such as "Click Here!" or a similar call to action may significantly increase interactivity. Furthermore, promotional incentives or "freebies" will also encourage user response.

Some researchers have learned that animated banners may boost click-through rates up to 40 percent higher than on static ads. In addition, banners at the top of the page have been found to be

almost twice as effective as banners in other locations. Finally, be sure to directly link the user to a specific page, not just the homepage. No one wants to spend extra time hunting down a single page from an entire site. Let's see how Aura can help you to produce some stunning banners.

Launch Aura. Select the configuration you prefer, then choose the VGA Hires and page size of 468 X 60. Click the OK button.

Creating a banner for the Web is just like creating a printed ad. It's always best to mock-up a couple of ideas on paper or in Aura to make sure you're happy with the layout, fonts, and style. Fortunately, with the toolset of Aura, you can do these sketches in the program. Once you have the look you want, you can move to creating the finished piece. For this tutorial

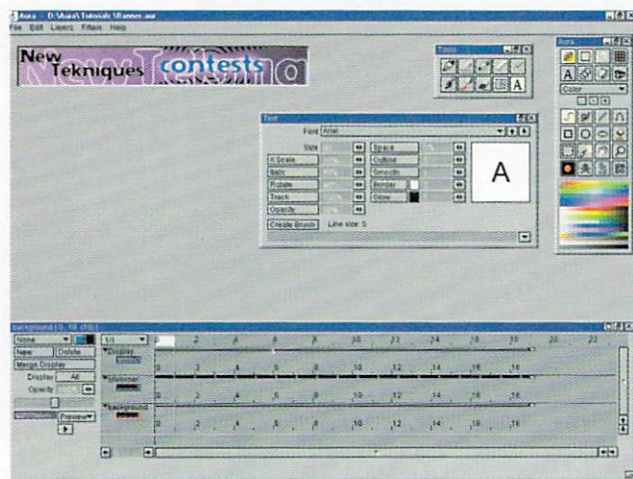


Figure 1

New Techniques contests

al, we will be working from a banner that is already finished (Figure 1). I sketched four designs until I got to this one.

The number of buttons in Aura can be intimidating to the newbie, but don't worry, I'll guide you every step of the way. In this tutorial, we will be putting layers to good use. Click on the Layers button to open the Layers control menu. The Layers button is the second button on the second row of the main panel (Figure 2).

Building the Background

Let's start by building the background of the banner. Click on the Flood Fill tool, which is represented by a paint bucket icon located on the main panel. Right click on the Color Range button to open the Color Range Menu. This is the second icon on the first row of the main panel. This is where we will set up the gradient to be used as the base of the background (Figure 3).

In the Color Range Menu, select the first cell by clicking on it. Click on the pick button, and select any color from the screen. To do this simply click anywhere on the screen (buttons, icons, or the working palette), hold down and move the pointer around to see which color you want to select. Once you have the color you want simply release the mouse button. This feature can come in handy if you need to match a color in an existing image. For this tutorial I suggest you pick a *bright color*.

Select the cell to the far right and pick a color for it. For this tutorial it is best to pick a *darker*

color. To give the illusion of depth, I added a little texture with about 20% noise to the gradient. You can use the numerical slider or click to change the numeric value next to it.

Once you have all the settings to your liking it's time to fill the banner. Make sure your drawing mode is set to color, then click on the left side of your banner. Let up and drag your cursor to the right side of the banner and click again. This defines the direction of the gradient. If you like what you see then let's continue. If you want to play with the gradient settings for a little while don't worry—this tutorial will still be here after you're done. You can always undo the fill and change it to whatever you like. When you're done, the image on your screen should look something like Figure 4.

Now let's use one of Aura's special effects filters called Waves. Go to the Filters menu and select special effects>waves. This will bring up the Waves panel (Figure 5). Click the Adjustable Area button and click in the area in the banner you want to effect. Change the Number of Waves to 11. You can use the preview window to get an instant update to your changes. Once you have the proper settings, click Apply to layer. If you like the results close the Waves panel. Now would probably be a good time to save your work.

Let's Make It Fancy

We're ready to add some other elements to the banner. To keep things clean and organized, we will work with several layers. Let's make a new layer for the words



Figure 2

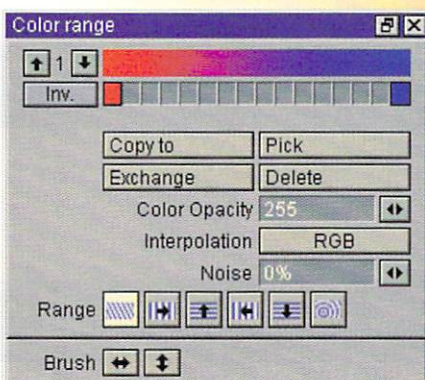


Figure 3



Figure 4

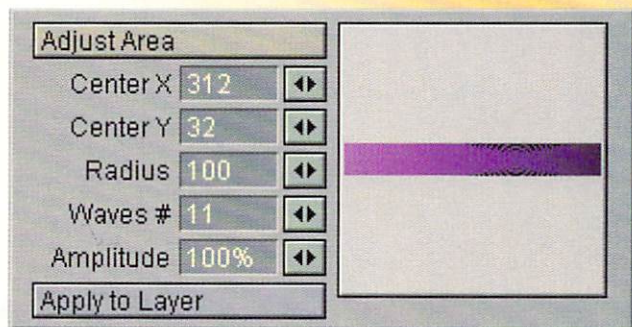


Figure 5

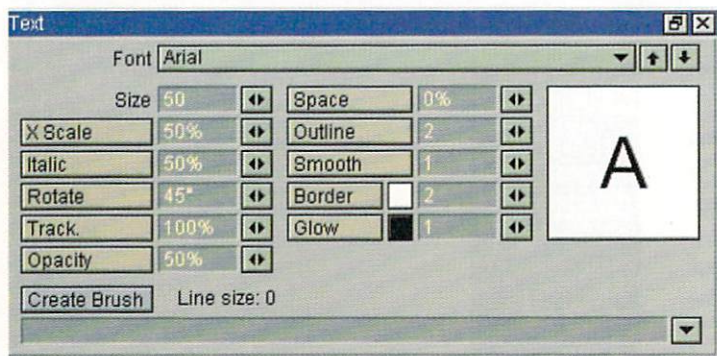


Figure 6



Figure 7



Figure 8



Figure 9

"New" and "Techniques." In your layers panel, click the New button. This adds a layer on top of the current layer. To keep things really organized, we will name the layers. Click on the layer list, located by the current name of the layer (in this case "untitled"). Choose the title at the top of the

list and type in "NewTechniques" and click OK.

If the Tools panel isn't open, click the first button of the second row on the main panel. Click the Text tool button. It's the one with the "A" on it. This opens the text panel (Figure 6). In the bottom text field enter "New" then choose a nice bold font from the font pull-down menu. I went with "Flexure." Select the color black from the working palette, and change the font size to 36. Click the Create Brush button. Now the word "New" is your brush. Move the cursor to the upper-left corner and click the left mouse button to apply it. Follow these same steps and create the word "Techniques." Apply it under the word "New." You should have something that looks like Figure 7. Save your work.

Show Time!

That was pretty simple text. Let's create something a little more complicated, to show off some of Aura's text features. Make a new layer and change the title to Contests. In the Text panel type the word "contests" in the text field. Change the size to 50. Change the color of the text to blue. Click on the Glow button. Now click

the glow color next to it and pick a color from the working palette. Click the Create Brush Button and apply it to the right side of the banner. It should look something like Figure 8. Save your work again.

Now that we have the meat of the banner, we can play with extra design elements, like line art and shapes. These kinds of elements add a bit of depth, color, and texture to the piece. Make a new Layer, and title it "lines." Move the layer on top of the background layer. In this example we will use the word "NewTechniques" as line art. Type "NewTechniques" in the text field in the type panel. Change the font size to 100, and turn the glow off by clicking the Glow button. Change the color of the text to white. Click Outline and change the thickness to 3. Click on Opacity and change it to 35%. This will let a little of the background show through the type. Click Create Brush and apply it to the banner. You should have something that looks like Figure 9. Your layers panel should look something like Figure 10. Save your work.

Bring Your Banner To Life -

There you have it! Your first Aura banner. But what if you want to have an animated banner? Well, that's what Aura does best. Let's put a shimmer across the words "New" and "Techniques." This is a very popular look for banners and is made simple using Aura's layers and its KeyFramer.

The first step is to merge all the layers except for the "NewTechniques" layer. On the NewTechniques layer list choose

COMING IN DECEMBER

LightWave 3D™ Applied Version 5.6

Written by industry-leading authors Dave Jerrard, Scott Wheeler and Joe Tracy

Pre-Publication Offer!

\$44⁹⁵ with CD-ROM

\$49⁹⁵ Regular Price, Item #CADB700, Over 500 pages, softcover

Imagine a tutorial that has over 100 steps and more than 62 images, and that's just one chapter! The authors to LightWave 3D™ Applied, Version 5.6 understand that users learn best from step-by-step hands-on tutorials. With nine very detailed tutorial chapters, readers of LightWave 3D™ Applied, Version 5.6 will be able to build an entire medieval castle and onward to the Mercury Space Capsule. In addition, the authors have set up a specially designed web site that allows you access when you purchase the book to help answer any questions you may have.

With your purchase, you will receive a **FREE CD-ROM** containing materials featured in LightWave 3D™ Applied, Version 5.6 and extra objects, textures, and images.

Features Include:

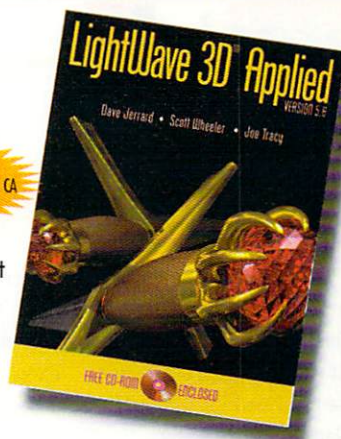
- Nine step-by-step and hands-on tutorials.
- A special chapter for those who have never used LightWave 3D™ or Inspire 3D™ and want to get started.
- A special chapter on the secrets of a great demo tape and breaking into Hollywood as a LightWave 3D™ animator.
- A CD-ROM packed full of material from the book along with FREE bonus material!
- Insight from industry leading authors along with their tips and secrets to help you succeed.

ORDER TODAY! 1-800-598-6008

Outside the U.S. 218-723-9180 • Fax 218-723-9146

Visit our web site www.advantstarbooks.com/lightwave/

Book signing at the DCC Expo
December 2-4, 1998, Los Angeles, CA
Booth #620



Code: 950594

New
TECHNIQUES
ON-LINE

Get the Latest NewTek News

- The Lightwave Box
- The Flyer Box
- Aura & Inspire 3D Areas
- New Bonus Section for readers
- Hundreds of pages to explore

www.newtechniques.com

Hide. Click the Merge Display button to merge everything that is visible. Add a new layer and move it to the bottom of the layer list. Use the Flood Fill tool to fill it with black. Merge display.

Make a new layer and name it "background." Fill this layer with white, and move it to the bottom of the layer list. Choose Show from the "newtechniques" layer list, to make it visible. What we want to do now is make the words on this layer into a brush. To do this select the Brush Cut Out tool from the main panel. It's the icon with a box made of dotted lines. Make sure you're on the "newtechniques" layer and right click, hold and drag a box around "new" and "Techniques," then release the button. The words should have been cut from the banner and should now be a brush. From the drawing mode list on the main panel, choose Erase. Click on the Display layer to make it active. Place the brush in the upper-left corner (where you cut it from) and click the left mouse button. You should be able to see the white background through the words.

Now let's make it shimmer. Create a new layer and place it under the display layer. Name it "Shimmer." Delete the "newtechniques" layer and click on the Display layer. Select the Pencil tool and make sure the Drawing Mode is set to Color. In the Shimmer layer, draw a box with the rectangle tool, and fill it with a gradient that goes from black to white to black. Make sure the noise is set to 0%. It should look like Figure 11. Use the Brush Cut Out tool to make it a brush—select the Brush Cut Out

tool, right click, and drag the bounding box around it and release.

It's now time to animate the brush. Go to the Filters menu and select animated>keyframer. This brings up the KeyFramer panel (Figure 12). On the timeline at 0% move the brush to the far left, off the banner workspace, and at 100% move it a little past the center on the right side of the banner. Go to the Layer panel and drag out all the layers to frame 18. From the Shimmer layer list choose Select All. Go to the KeyFramer panel and Apply to layer. Click on the Color Range icon to turn it off. Select the background layer and fill it with black.

Choose Show from the Display layer list. Select Make from the preview button in the layer panel. You should see an animated shimmer across the words "New" and "Techniques." Save your work. That about does it. Save your work out in the format you want and you're set. As you can see, creating banners with Aura is a breeze. Now go out and get your part of the \$5 billion in banner work that's there for the asking!

William C. Vaughan is the creative director for the epic software group, inc., of The Woodlands, TX. He is also a certified LightWave 3D trainer and the creator of the Aura logo. If you have a banner design you are particularly proud of, e-mail it to epic@flex.net. He will take the best ones and post them to the 3D interactive web site at: www.3dinteractive.com.

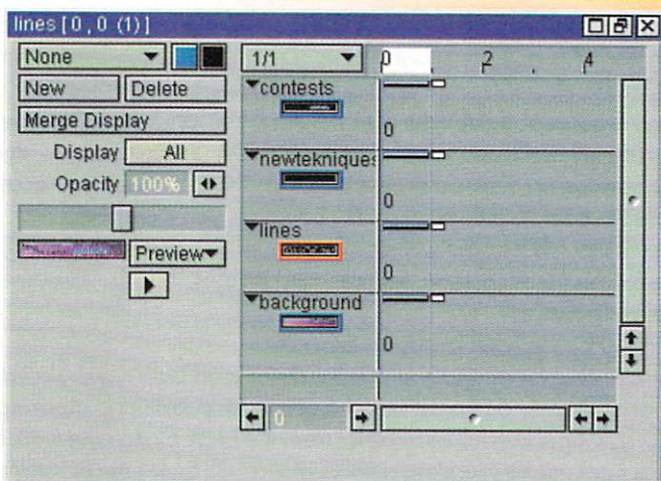


Figure 10



Figure 11

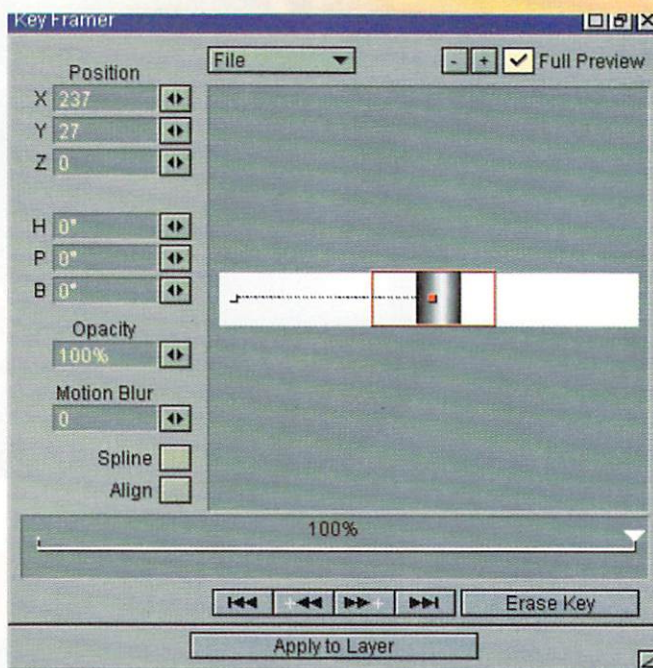


Figure 12

continued from page 6

an accurate measurement of the distance between image pixels.

Recall that on lines 45 and 46 we pre-calculated a radius value from the center of the image. Using the center of the image as the origin of the 2D universe, we can calculate a pixel's distance from the center. This distance can be compared with that of the minimum distance needed for the pixel to be included in the resulting image. We perform this test on line 57. If the pixel falls outside the circular radius of our artificial lens, then we simply set that particular pixel to black ($<0,0,0>$).

However, if the pixel falls within the lens diameter—or the lens option has been turned off by the user—then we proceed to convert the pixel value into a shade of green. This takes place between lines 61 and 72. First, we calculate the percentage of the color value by dividing the sum of the RGB values by their maximum values. To this we then add the gain value (also a percentage) to allow the user to increase or decrease the overall brightness of the green tint in the resulting image.

On line 62, we ensure that the resulting percentage does not exceed 1.0 (or 100%).

A true night vision scope will contain a certain level of "noise" in its video. We need to add some noise of our own to produce a more convincing simulation.

The code on lines 64 through 68 generates this random noise. We randomly lower the established "green" level by 10% (0.1). A higher percentage would produce darker noise in your resulting image/animation.

Lastly, we apply the calculated level of green to that component of the pixel, and zero out the remaining values. This new pixel RGB value is then injected back into the image using the `putpixel()` function (line 74).

The last effect we will produce on the image (if the user has selected it) is a cross hair image that is centered in our image. This code is contained in its own user-defined function called `draw_cross()` (beginning on line 83). Within `draw_cross()`, two loops are used to draw the vertical and horizontal lines. The `vmag()` function is used once again to make sure the resulting cross hair image does not exceed its calculated size, which is some

percentage of the size of the lens.

Whew!

Now that we've ventured into Layout territory, it's easy to see that the plug-ins we will create are comparatively more complex than those we did for Modeler. However, we'll experience the real hurdles in the first few we create. After that, the structure and functionality of Layout

plug-ins should be familiar.

Next time, we'll combine the functions of two different Layout plug-in types to accomplish an effect that could not easily be produced by one alone.

Bob Hood is in charge of LightWave 3D's plug-in SDK development for NewTek.

InfoTek is...

...the new state-of-the-art way to gather information on NewTek related products and services.

NEWTECHNIQUES

www.newtechniques.com/infotek

Search for information by reader service number

Search for information by company

Search for information by product category

Search for information by issue

Flying High

TIPS, TECHNIQUES, TUTORIALS, AND SHORTCUTS FOR YOUR VIDEO TOASTER FLYER PROJECTS

BY JOE
TRACY

Good News For A Change! ANNOUNCEMENTS AND YOUR QUESTIONS ANSWERED



Figure 1

The Video Toaster, Video Toaster Flyer, and Amiga markets have suffered greatly during the past year due to one negative development after another. That phase seems to be behind us now as there is a lot of good news to pass around for a change. In short, the Amiga 4000 lawsuit has been resolved, NewTek has found a solution to the lack of Amiga 4000 computers, BoXeR motherboards will be Toaster/Flyer-compatible, and there is a new online help forum specifically for Flyer users.

Lawsuit Resolution

A settlement has been reached in the Amiga 4000 lawsuit that calls for QuikPak to send all of its remaining Amiga inventory to Germany where Amiga International will begin assembling Amiga 4000 computers, with units arriving to dealers hopefully before the end of the year. The downside to the settlement is that QuikPak no longer will be able to produce Amiga computers.

NewTek's Solution

Throughout the lawsuit, NewTek took an active role in coming up with its own solution. It sought out a company that could adjust

Amiga 1200 computers to be fully compatible with the Video Toaster and Video Toaster Flyer. The result has been met with great success and very shortly we'll see full-functioning Video Toaster/Flyer 4000 cards working perfectly in these Amiga 1200 systems. So between the lawsuit's resolution and NewTek's active role in having a back-up plan, it looks like shortage problems for Video Toaster/Flyer systems are old news.

BoXeR Motherboards Compatible

Adding to the great news is that the new BoXeR Amiga motherboards, due out in March, will be Video Toaster and Flyer-compati-

ble. Production delays allowed Blittersoft to make a commitment to Toaster/Flyer compatibility issues so that Toaster/Flyer owners can benefit from the advancements the BoXeR motherboard will contain, like a 64-bit design and increased Chip RAM access times.

Flyer Help Forum

NewTekniques magazine recently opened up a "Video Toaster and Flyer Help Forum" online. The forum, available 24-hours a day, allows you to post questions on any problems you've been having with your system and allows you to answer other peoples' questions. It's like an open technical

COMMENTS OR
SUGGESTIONS

email:

jtracy@

advanstar.com

support forum for quick support. You can access the forum by going to the TekTicker page at www.newtechniques.com/TekTicker/ and selecting "Enter the Toaster and Flyer Help Forum" from the menu.

New Toaster/Flyer Columns!

Two new Toaster/Flyer columns have been added to the NewTechniques Bonus Area for you to access. The new columns, one run by Michael "Aussie" Holten and Paul Lara, premiere Jan. 2, 1999 at the following URL: www.newtechniques.com/bonus.

Questions and Answers

Question: I'm having trouble understanding what all the inputs and outputs are for on the Video Toaster Flyer card, as none of them are labeled.

Answer: For your convenience, I have drawn a mockup of the Video Toaster Flyer card (Figure 1). As you can see from the drawing, the first four RCA connections are for Audio Out (first two) and Audio In (third and fourth). The last two connections you can ignore. The first is Video In and second is Y/C In. Both were placed there for possible future upgrades (like a daughter TBC) that have yet to see the light of day.

Question: I'm getting a "Toaster Not Responding" error message every time I try to start the program. Sometimes it will just freeze and not let me go any further. Can you help?

Answer: Chances are that it is a loose cable or center frequency conflict. First, turn off your computer, remove the top, and press all the connections going into the Flyer card firmly in place. Check

other connections, too, while you're at it. Put the top back on, turn on the computer, and try to load the Toaster/Flyer. If it still does not load then follow these directions:

After you get the "Toaster Not Responding" message, click OK. Now carefully look at the outline of your Workbench screen box (the lines that make the box). Are the lines completely straight, or do you see some breakup in them? If you see some breakup in the lines then this is a classic case of needing to adjust your Center Frequency until the lines are straight. Then try to load the program again.

Chances are that one of the two above solutions will solve your problem.

Question: When I view video directly from my Flyer, it looks great! However, when I record it to VHS tape and play it back, the quality seems very low. How can I raise the quality of my VHS dubs?

Answer: This is a very good question. So many times we become focused on the projects we are doing that we lose sight of the importance of giving the client the highest possible quality. Here are a number of suggestions that will help improve the quality of your final product:

1) Always record in HQ5 mode. With storage so cheap, there is no excuse for not having enough to do HQ5 recordings. While HQ5 gives you less hard drive space, it gives you the highest quality and you should never settle for anything less.

2) Use short and high-quality cables. The cable going from your Program Out to your VCR needs to be the highest possible quality and as short as possible. The less

distance it travels on a strong connection, the better the recorded picture will be.

3) Use a high-quality recording VCR. As the price of VCRs continue to plummet, so does the quality of the recording mechanisms on these VCRs. If you use a cheap VCR, you can expect cheap results. For my recordings, I use high-quality Panasonic duplication VCRs that run about \$1,000 each. The price is high, but so is the quality. JVC also makes some excellent high quality VCRs.

4) Use high-quality videotapes. There is a big difference in the quality of videotape that you use. You should find a very high-quality tape that you can purchase in quantity then continue to consistently use that brand. For very important clients, purchase the expensive "Broadcast Quality VHS" tapes.

By following the above four steps, you will dramatically improve your productions and will be much happier with the finished results.

Question: What is the best way to get a small project to replay over and over?

Answer: There are two ways you can accomplish this. The first is to use the "RePlay" ARexx script located in your RXTTools directory. By placing this icon at the end of your project, it will automatically reload and playback again! The problem is that you cannot control the amount of time it takes to reload and, depending on the size of your project, it could take up to a minute! Make sure any black space at the beginning of your project is deleted (to save a few seconds). You can simply open your project with

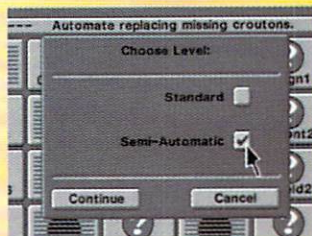


Figure 2

a fade icon (instead of a black screen icon appearing first). If you fade to black at the end, make the black screen clip as short as possible. Black will be recorded while the project reloads.

The second solution is to clone your entire project over and over until you reach the desired program time. While it will take what seems like "forever" for the project to load (for playback), you will have full control over the time before the project replays.

Question: I moved some clips to another drive and now when I try to load a project it tells me that some clips cannot be found. Do I have to rebuild the project?

Answer: When you save a project, it memorizes the location of each clip. If you move a clip, then the project cannot find it. The good news is that there is a FixProject ARexx script in your RXTTools directory that you can run to fix the problem! First, load your project. When the error comes up that some clips can't be found, click OK so that it finishes loading. Go to your ARexx directory and double-click the FixProject icon. Select Semi-Automatic (Figure 2). You will be asked to locate one of the files you transferred. Go to the new drive, find the clip it wants you to find, and click OK. It will now find all the missing clips and rebuild your project.

Until next time, may all your flights be safe, fun, and profitable.

TO ORDER

CALL 800-544-6599
MONDAY-FRIDAY 9-5:30, CST
 INFORMATION 414-548-8120 • FAX 414-548-8130
 TECH SUPPORT/RMAs 414-548-8159 • 12-4 PM, Mon-Fri.

WE NEVER CLOSE

VISIT OUR
Internet site
 www.sharbot.com

Shop our secure online store for a bigger selection and more information about each product at
www.sharbot.com



Safe Harbor Computers -

Your #1 Source for Digital Video, 3D Animation, and Multimedia Products.



New!

AuraFX Vol.1

The world's first plug-in for Aura! This new CD (DEC, Intel) automates Aura's processes, provides Macros for control, and allows you to merge layers. Included are 20 neat effects plus a bonus 10 extra effects FREE!149.99

(Dealer inquiries also welcome.)

Batch Factory, Amiga45.99



Control Tower 2.0 -

Utilities for Flyer owners129.99

Corporate Video Backgrounds -

250 backgrounds which can be used in any Mac, Intel, or Amiga-based Video Editing Facility89.99

Decision Maker, Amiga179.00

Surface Pro - 60 new seamless, image-based surfaces that are instantly available through LightWave55.99

Visual FX for Image FX89.99



The LightWave 3D Plug-in Experts for Intel, Mac, and DEC!

Fractalizer129.00

Lock & Key114.99

LumeTools Complete set649.99

Particle Storm 1.3, Intel249.00

Particle Storm 2.0Call

RegiTools121.99

Shaderman149.00

Tree Druid169.00

Thor115.00



You get 252 textures, all seamless and tileable in JPEG format, PLUS 192 matching bump maps - all you can really use! Works with LightWave and other 2D/3D software packages.
Seamless Textures You Can Really Use89.00

3Dlabs

New!

Oxygen RPM AGP

Graphics accelerator board offers 2D and 3D acceleration. It includes 64MB on-board memory for displays up to 1600 x 1200. It is a 100% OpenGL card, and can drive two high-resolution monitors for a unified dual-screen desktop from a single AGP slotCall

Oxygen 102 PCICall

Oxygen 202 PCICall

Oxygen 402 PCICall

Oxygen GMX AGP (NEW!)Call

HARDDRIVES/STORAGE

SONY Seagate Quantum™

Quantum Viking II 9.1GB Ultra SCSI LWCall
 Quantum Atlas III 9.1GB WideCall
 Seagate ST34520 Narrow/Wide 4.5GB Medalist ProCall
 Seagate ST39140 Narrow/Wide 9.1GB Medalist ProCall
 Seagate ST39173 Narrow/Wide 9.1GB Ultra BarracudaCall
 Seagate ST39103LW 18GB Wide Cheetah (NEW!)Call
 Seagate ST39102LW 9.1GB Ultra CheetahCall
 Seagate ST118273 Narrow/Wide 18GB Ultra SCSICall
 Seagate ST423451 Narrow/Wide 23.4GB Ultra EliteCall
 Sony SDT 9000 DAT 12GB Int. w/cartridge (Great with the Flyer!)889.00

Guaranteed Low Prices!



FREE Sonic Foundry T-shirt with your purchase of ACID or Sound Forge 4.5!

Have fun mixing and creating your own music! **ACID** allows you to bring your own audio samples or work with a library of hundreds of cutting edge loops in many different instruments and musical stylesCall

Loops for ACID:

Cyclotron Resonator, Essential Sounds 2, Ethnicity, Funky xtreams 1or 2, Signals 1or 2, Syntonic Generator, Street Beats, Native America, Pandora's Box, and Vortexual AmplitudeCall

ACID pH1 - Low-cost loop based music production tool. Create music like the professionals doCall

Professional CD FactoryCall

Professional Remix FactoryCall
CD ArchitectCall

Sound Forge 4.5 - New version includes an array of new tools for development of interactive WEB content; save files in RealAudio 5.0, NetShow 3.0 or Java format. Also includes simplified loop editing and new features for manipulating rhythmic audioCall

Sound Forge XP 4.5 - Heighten your internet presence and bring your multimedia projects alive with dozens of audio effects and processing tools, Record, edit and process mono or stereo files quickly and easilyCall

Acoustic Mirror - Recreate acoustic environments with this signal-processing tool. Adds real sounds to existing recordingsCall

DirectX Noise ReductionCall

XFX 1, 2, and 3Call



ProMix and Render FX are excellent software programs for the Toaster/Flyer system!

ProMix keeps you from running out of audio tracks. Preserve audio levels, pans, balance, fades, and timing while mixing clips. **ProMix**80.00

Bring back those neat Toaster tricks with **Render FX**. Transform any Toaster effect into a single Flyer clip.
Render FX125.00

Flyer Flight Notes is just what you need to work your Flyer to its potential. This is a must-have tutorial presented by a top-notch Flyer expert35.00

When purchased with ProMix or Render FX25.00

Mark Thompson Videos for LightWave 3D

#1 Layout Tips56.99

#2 Materials56.99

#3 Character Modeling56.99

PROWAVE, INC.



Fire CD is a collection of pyrotechnics in a high quality, uncompressed, full screen format. Add flare to your web pages, videos, 3D animations, and multimedia presentations. All this for a low price!42.99



OZware

Aussie's Fast Frames 2.0, Amiga75.00

Co-Pilot Video 1.0, Amiga89.00

Co-Pilot Audio 1.0, Amiga89.00

Co-Pilot Video/Audio 1.0

Bundle, Amiga170.00

Multicam Editor129.00

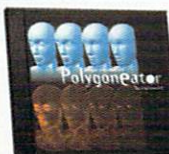
Plug-Ins and Utilities for LightWave



Fiber Factory 2, Intel/Mac – Get Hairy! Sculpts geometrical fibers over the surface of your objects. This new version features OpenGL support, new tools, and realtime interface.....**129.00**
DAB Intel – Ray painting for a whole new look.....**89.00**
Extract Audio, Intel – Audio waveform driver.....**55.99**
Particle Type Intel – Replace the LightWave "dot" with new shapes.....**79.00**
PointAt Intel – Perfect for mechanical simulations and character animations.....**59.99**
Sparks, Intel/Mac – For fireworks, waterfalls, and more.....**154.99**
Time Machine, Intel – Perform timeline morph editing.....**79.99**
Wobbler, Intel/Mac – Create realistic wobbles in your models.....**59.00**

More Information on MetroGraf products is available at www.sharbor.com!

METRO
Animation and Software



Polygon Eater – A reduction plug-in for LightWave. It quickly reduces the number of polygons to the number desired, while maintaining the characteristics and overall shapes of models. Also, enables you to control reduction for each part as well as for the whole model.....**159.99**



Motion Designer – A deformation plug-in that allows animations to be created using physical stimulations. **Motion Designer** is highly effective in creating animations of soft objects, such as cloth.....**359.99**

DSTORM, INC.



LIGHT ROM

Purchase any Light-ROM and receive an additional CD FREE!
 Light ROM Gold.....**17.00**
 Free copy of true 3D
 Light ROM Vol. 4.....**16.00**
 Free copy of Imagine PD 3D
 Light ROM Vol. 5.....**23.00**
 Free copy of Multimedia Backdrops
 Light ROM Vol. 6.....**37.00**
 Free copy of Studio Meshkit
Order NOW! While supplies last!

IN STOCK!

LIGHTWAVE 3D



LightWave 3D 5.6 – Powerful 3D software to put creativity in motion!

LightWave 3D 5.6.....Call
 LightWave 3D 5.6 w/Interior Design Collection.....Call
 LightWave 3D Upgrades.....Call
 Inspire to LightWave Upgrade.....Call
 Aura.....Call Film Grain.....**129.00**
 Inspire.....Call Motion Pack.....**209.99**

Call for Pricing on Toaster and Flyer Systems.

We sell School and Government versions, Competitive and Cross Platform Upgrades too!



CineGraphics

UView 2.0 – 3D utility used to texture map objects parametrically.....**529.99**
UVView Shader Plug-in – Reads the UV file to render the UV mapped object in LightWave.....**89.99**
BlowUp & Shatter For LightWave – Shatter any object; use BlowUp to animate the pieces for realistic explosions.....**89.99**
Power Plug-ins For LightWave, Intel – Includes BlowUp, Shatter, Swarm and more, to enhance your objects.....**209.99**
Power Plug-ins For LightWave, DEC.....**309.00**



CHECK IT OUT!

This super cool, interactive LightWave tutorial provides excellent tips, info, and great entertainment.

LENY CD #1.....**69.00**
LENY CD #2 Great tips for improving character animation in LightWave 5.5.....**45.00**



Tri-U is a new form of texture mapping that allows for perfect mapping with no distortion.....**259.99**



Genesis for LightWave: Visual effects plug-in! Features lens flares, lightning, gas clouds, space effects, and more!.....**299.00**

MeshPaint 3D, Intel/Mac/DEC.....**65.00**

POSITRON



ImageFX 3.2 w/CineMorph is the most complete image processing solution you'll find for the Amiga. Easy and powerful interface; fantastic special effects...**ImageFX 3.2 w/CineMorph, Amiga**.....**229.00**
Aladdin 4D.....**189.00**
ImageFX AND Aladdin 4D.....**350.00**



LIGHTWAVE PLUG-INS

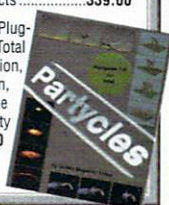
Animation Master 98, Intel/Mac.....**176.99**
Enzyme Shaders.....**85.99**
Final Effects Complete, Intel/Mac.....Call
Hollywood FX 3.1 Silver, Intel.....**299.00**
FREE T-shirt while supplies last!
Humanoid for LightWave.....**140.00**
Life Forms.....Call
Lightscape 3.1.....**355.99**
PhotoShop 5.0.....**608.00**
Puppet Master, Intel/Mac.....**299.00**
Pyromania Pro, Intel/Mac.....**219.00**
Surface Effectors.....**79.00**
SurfaceSuite Pro.....Call
Vertilities.....**82.99**
World Construction Set 4.0 Intel.....**645.00**

SAFE HARBOR
WISHES YOU A SAFE AND HAPPY HOLIDAY!



Con-Motion 2.0 LightWave Plug-in utility. Control positioning and movement of objects.....**339.00**

Particles – New! Plug-in for LightWave. Total control over direction, strength, extinction, and recycling of the particles and gravity effects.....**229.00**



Safe Harbor is dedicated to providing quality digital video, animation and multimedia products, technical expertise, and courteous, personalized service to our customers to maintain our impeccable reputation and total customer satisfaction.

Terms: POs accepted from schools and government agencies • Personal checks require 7 days to clear. • Defective products replaced promptly. RMA number required (call 414-548-6159) for all merchandise returns. Returns not accepted after 15 days. Returned products must be in original packaging, postage prepaid. Opened software not refundable. Returns subject to a 15% restocking fee. • Not responsible for typos. Prices subject to change.



W226 N900 EASTMOUND DR., WAUKESHA, WI 53186



THE PROFESSIONAL'S SOURCE FOR PHOTO,

FOR ORDERS CALL:

800-947-9938

212-444-5038

OR FAX (24 HOURS):

800-947-9003

212-444-5001

Store & Mail Order Hours:

Sunday 10-5

Monday thru Thursday 9-7

Friday 9-1 • Saturday Closed

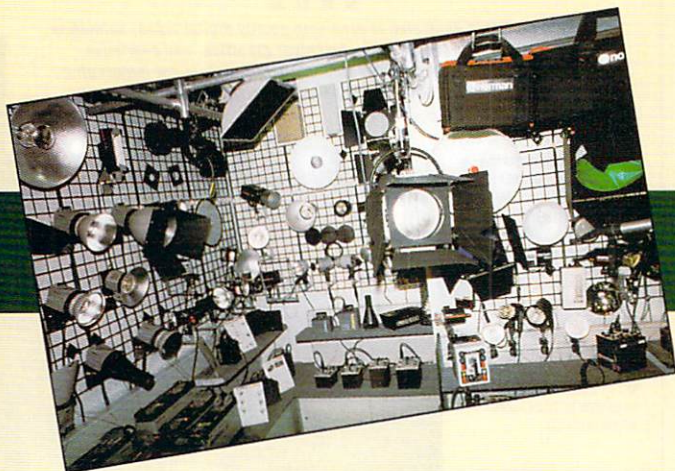
On the Web: <http://www.bhphotovideo.com>

OUR NEW EXPANDED LOCATION



THE
PROFESSIONAL'S
SOURCE

**For All Your Photo, Video,
Electronic Photography
and Pro-Audio Needs**





TO INQUIRE ABOUT YOUR ORDER:
800 221-5743 • 212 239-7765
OR FAX 24 HOURS:
800 947-2215 • 212 239-7549

New Address:
420 Ninth Ave. (Bet. 33rd & 34th St.)
New York, N.Y. 10001

Panasonic

Broadcast & Television Systems

AG-EZ20

DV Palmcorder with IEEE1394 DV Interface

Innovative and feature packed, AG-EZ20 is easy to use with up to 90 minutes of recording time on a standard battery. It has a surprisingly rugged, durable body that is also compact and comfortable to hold, making it ideal for use in the field for single handed news gathering operations. Features include Photo Shot which is useful for creating video photo albums or insurance tapes. As many as 750 pictures can be recorded on a 60 minute tape. To enhance creativity, the lens can accommodate settings which include focus, gain, white balance, shutter speed and backlighting.

- Equipped with the IEEE1394 DV interface so dubbed recordings will be clones of the original, or download to your computer where they can be edited. (DV capture card and third-party software required).
- Can record in both SP and LP modes for up to 1.5 hours of recording on a 60-minute tape—with no degradation in picture or audio quality. SP mode is provided for compatibility with Panasonic's DVC PRO VCRs.
- Digital Electronic Image Stabilizer prevents jittery video.
- Variable speed 10:1 power zoom lens, plus 100x digital zoom. Lens can focus up to 1/4-inch from the subject.
- 180,000 pixel color viewfinder for remarkably clear viewing.

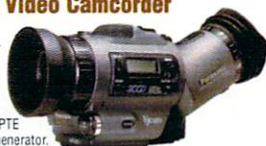


- Time date stamp with seconds for legal and law requirements like depositions & crime scenes.
- Digital effects include audio and video fade, wipe, mix, strobe, solarization and trail. Also has sepia tone for an antique look and negative/positive so film negatives can be converted in-camera to viewable pictures.
- 3.8-inch color LCD monitor (131° more area than a 2.5-inch display) rotates 270° vertically and 180° horizontally, so you can monitor your shoots — no matter the angle.
- Full manual control of focus, gain, white balance, shutter speed and backlighting.

AG-EZ1 3-CCD Digital Video Camcorder

- Digital recording delivers 500 lines of horizontal resolution with no noise. (S/N ratio is 54dB).
- 10:1 power and 20:1 digital zoom lens. Both zooms are adjustable in four speeds (3.5-15 sec.). For extreme close-ups the lens can focus up to 1/4" from the subject.
- Two digital audio modes, choose between two-channel 16-bit stereo recording or two sets of 12-bit stereo.
- Huge 1.5" 180,000 pixel color viewfinder with 400 lines of resolution displays all functions on demand.
- Digital Electronic Image Stabilizer (DEIS) compensates for jittery video. Particularly effective when the digital zoom is employed.

- Variable speed shutter from 1/60 — 1/8000 of a second
- Built-in SMPTE time code generator.
- Digital Photo-Shot lets you record a still-frame for six seconds, while audio continues as normal. 290 still pictures can be recorded on a single 30-minute tape. TopScan function finds any shot easily.



AG-EZ30

World's Smallest 3-CCD Camcorder with IEEE1394 Interface

The AG-EZ30 combines 3-CCDs and the DV format to deliver a level of picture and sound quality that makes it one of the most advanced camcorders of its kind. Weighing just 1.5 lbs. this incredibly lightweight camcorder also incorporates a large 2.5-inch color LCD monitor and has a host of sophisticated auto functions as well full manual control when required.

- 3-CCDs (270,000 pixels each) with a large light-collecting area give the camera high sensitivity and wide dynamic range. Double-density pixel distribution and a gapless dichroic prism further ensure razor-sharp images and extremely faithful color reproduction.
- Selectable 2-channel 48 kHz/16-bit or 4-channel 32 kHz/12-bit PCM audio recording.
- Built-in stereo mic and external mic input as well.
- 180,000 pixel, 2.5-inch color LCD monitor. Also has a 0.5-inch color viewfinder.
- Digital Image Stabilizer for clear, shake and jitter free shots.
- 12X optical zoom as well as 30X and 120X digital zoom functions. Move from wide-angle to full zoom in 1.3 seconds allowing quick framing while in REC pause.

- Offers six digital effects: Wipe, Mix, Strobe, Gain-Up, B&W and still mode.
- Large-diameter focus ring enables a high level of focusing precision. A Multi-Function Push Dial allows easy setting of the 16-step iris, 5-step gain control (+12dB maximum) and 14-step shutter (up to 1/8000 second). Mic input level can also be set in steps (-20/-10/0/+3/+6 dB).
- Five program AE modes for shooting in a variety of different conditions. There is also a five-mode white balance: Set, Fluorescent, Auto, Indoor and Outdoor.



Canon

XL-1

3-CCD Camcorder with Interchangeable Lens Mount

With 3-CCDs, exclusive Interchangeable XL Lens Mount System, unmatched optical technology, SuperRange Image Stabilizer, DV and simultaneous four channel audio recording, the XL-1 offers unmatched image quality and shooting versatility.

Interchangeable XL Lens Mount System

- Interchangeable XL lenses for unsurpassed flexibility and superior range. XL lenses incorporate the highest quality, multi-coated optics to achieve 60 lines of resolution.
- In addition to the standard 16:1 lens, there is an optional 3X wide-angle lens, a 1.6X extender and an EF to XL adapter.
- 16:1 Optical Zoom with SuperRange Image Stabilizer
- The 16:1 has a focal length range of 5.5 to 88mm (35mm equivalent of 39 to 633mm). It offers variable speed zoom, manual zoom and manual focus control and has a one-push auto-focus button and built-in 1.5X ND filter.
- Besides a gyro sensor, the SuperRange Optical Image Stabilizer uses a motion vector to examine the image after it is received by the CCD to detect any shake missed by the gyro. Data is then fed back to refine the movement of the vari-angle prism resulting in the most advanced stabilization system available today.

Digital Audio

- Three digital audio modes (16 bit and two 12 bit modes) and simultaneous recording of four separate tracks. You can output each signal independently.
- Audio inputs with independent level controls.
- Optional MA-100 Mic Adapter/Shoulder Pad allows use of two XLR mics and allows shoulder mounted shooting.



3-CCDs

- Three 270,000 pixel CCDs with advanced Pixel Shift technology achieves 530 lines of resolution.
- Large 72 micron CCDs deliver a 4dB improvement in sensitivity. Vertical smear is also dramatically reduced.

Three Recording Modes:

- High resolution full motion video (Normal Movie Mode)
- High resolution stop action images of moving subjects (Frame Movie Mode)
- Perfect stills (Digital Photo Mode)

Unique Design & Dual Action Carrying Handle

- In addition to the normal side grip, the handle includes an additional start/stop switch and zoom control for dual-action shooting.

Additional Features:

- 180,000-pixel color viewfinder
- Zebra pattern and color bar generator
- Automatic and manual white balance, gain (five preset levels from -3 to +12dB) and exposure lock
- Composite, S-Video output, DV (IEEE 1394) in/out, Control L
- Digital fader and wide screen TV effect
- Headphone jack with level adjustment
- Remote control with jog/shuttle dial

SONY

DSR-200A

3-CCD Digital (DVCAM) Camcorder

Combining a compact and lightweight body with the superior picture quality of DSP (Digital Signal Processing) and the DVCAM format, the DSR-200A is the ideal acquisition tool for video journalists, event and wedding videographers, stringers and production houses. 500 lines of horizontal resolution, 48kHz or 32kHz digital audio, three hour record time, and minimum illumination of 3 lux is only the beginning. Other features include 16:9/4:3 capability, Steady Shot, high resolution 1-inch viewfinder, time code operation, time/date superimposition and an IEEE-1394 interface for direct digital output. Offers full automatic as well as manual control of focus, iris, gain, white balance and shutter speed.



- Variable servo 10X optical power zoom lens goes from 5.9 to 59mm in 1.7 to 24 seconds. The manual zoom rocker is continuously variable right up to where the digital 20X zoom kicks in.
- Sony's Super Steady Shot reduces high frequency camera shake without compromising image quality. SteadyShot uses horizontal and vertical motion sensors that allow it to work accurately while zooming, moving (even shooting from a car), and shooting in low light conditions.
- Has digital effects including audio and video fade, overlap and Slow Shutter.
- Automatic and manual focus, iris, shutter, gain and white balance. Iris is adjustable in 12 levels from F1.6 to F11, shutter from 1/4 to 1/10,000 of a second in 12 steps. Gain from -3dB to +18dB in 8 steps.
- Zebra Pattern indicator, built-in ND filter.
- Custom Preset function lets you preset, store and recall custom settings for color intensity, white balance (bluish or reddish), sharpness and brightness.
- Stores Photo, Date/Time, Shutter Speed, Iris, Gain and F-stop for easy recall. So if you have to re-shoot, you know your original settings for every scene and frame.

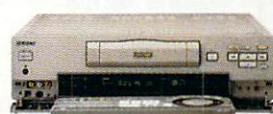
- Records Drop/Non-Drop Frame time code. Time code can be read either as RC time code or as SMPTE time code
- Has a large 1-inch B&W viewfinder with 550 lines of resolution for easy focusing even in low contrast lighting situations. Separate information sub panel displays time code, battery time, tape remaining and other camcorder functions without cluttering up the viewfinder.
- Records 16-bit/48kHz audio on one stereo track or 12-bit/32kHz with two pairs of stereo tracks (L1/R1, L2/R2), so you can add stereo music or narration.
- One-point stereo electret condenser mic for clear stereo separation. Directivity can be selected from 0°, 90° & 120°.
- Automatic & manual (20-step) audio level record controls. Monitor audio with headphones or from the LCD panel which has an active VU meter.
- XLR input connectors for mics and audio equipment.

DSR-200A Field Package:

- DSR-200A Camcorder • NPA-1000/B Battery Case Adapter
- 3 NP-F930/B 7.2v 4000 mAh Batteries
- AC-V900/B AC Adapter, Triple Battery Charger
- VCT-U14 Tripod Adapter • LC-2000CP System Case

DSR-30 DVCAM Digital VCR

The DSR-30 is an industrial grade DVCAM VCR that can be used for recording, playback and editing. DV standard 4:1:1 sampling digital component recording with a 5:1 compression ratio provides spectacular picture quality and multi-generation performance. It has a Control L interface for editing with other Control L based recorders such as the DSR-200A DVCAM Camcorder or another DSR-30. It also has a continuous auto repeat playback function making it ideal for kiosks and other point of information displays. Other features include high quality digital audio, IEEE-1394 DVCAM interface and external timer recording. The DSR-30 can accept both Mini and Standard DVCAM cassettes for up to 184 minutes of recording time, and can playback consumer DV tapes as well.



- Records PCM digital audio at either 48kHz (16-bit 2 channel) or at 32kHz (12-bit 4 channel)
- Equipped with Control L, the DSR-30 is capable of SMPTE Time Code based accurate editing even without an edit controller. Built in editing functions include assemble and separate video and audio insert
- By searching for either an Index point or Photo Data recorded by the DSR-200A camcorder, the DSR-30 drastically cuts the time usually required for editing. The DSR-30 can record up to 135 index points on the Cassette Memory thanks to its 16K bits capability.
- Audio lock ensures audio is fully synchronized with the video for absolute precision when doing an insert edit.

- Built-in control tray has a jog/shuttle dial, VCR and edit function buttons. The jog/shuttle dial allows picture search at 1/5 to 15X normal speed and controls not only the DSR-30 but also a player hooked up through its LANC interface
- DV In/Out (IEEE 1394) for digital dubbing of video, audio and data ID with no loss in quality.
- Analog audio and video input/output makes it fully compatible with non-digital equipment. Playback compatibility with consumer DV tapes allows you to work with footage recorded on consumer-grade equipment. Tapes recorded in the DSR-30 are also compatible with Sony's high-end DVCAM VCR's.

PVM-14N1U/14N2U & 20N1U/20N2U

13-inch and 19-inch Presentation Monitors

With high quality performance and flexibility, Sony's presentation monitors are ideal for any environment. They use Sony's legendary Trinitron CRT and Beam Current Feedback Circuit for high resolution of 500 lines as well as stable color reproduction. They also accept worldwide video signals, have a built-in speaker and are rack mountable. The PVM-14N1U/20N1U are designed for simple picture viewing, the PVM-14N2U and 20N2U add RGB input and switchable aspect ratio.

They Feature:

- 500 lines of horizontal resolution
- They handle NTSC, NTSC 4:43, PAL, and SECAM.



- Picture (chrome, phase, contrast, brightness) and setup adjustments (volume, aspect ratio) are displayed as easy-to-read on screen menus.
- Closed captioning is available with the optional BKM-104 Caption Vision Board.

- PVM-14N2U/20N2U Only:
- (Last Input Switch) - Contact closure remote control allows you to wire a remote to an existing system so that the monitor's input can be remotely controlled to switch between the last previously selected input and the current input.
- 4:3/16:9 switchable aspect ratio

PVM-14M2U/14M4U & 20M2U/20M4U

13-inch and 19-inch Production Monitors

Sony's best production monitors ever, the PVM-M Series provide stunning picture quality, ease of use and a range of optional functions. They are identical except that the "M4" models incorporate Sony's state-of-the-art HR Trinitron CRT display technology and have SMPTE C phosphors instead of P22.

- HR Trinitron CRT enables the PVM-14M4U and 20M4U to display an incredible 800 lines of horizontal resolution. The PVM-14M2U and 20M2U offer 600 lines of resolution. M4 models also use SMPTE C phosphors for the most critical evaluation of any color subject.
- Dark tint for a higher contrast ratio (black to white) and crisper, sharper looking edges.
- Each has two composite, S-Video and component input (R-Y-B-Y, analog RGB) for more accurate color reproduction, the component level can be adjusted according to the input system. Optional BKM-101C (video) and BKM-102 (audio) for SMPTE 259M serial digital input.

- Beam Current Feedback Circuit
- 4:3/16:9 switchable aspect ratio.
- True multi-system monitors they handle four color system signals: NTSC, NTSC 4:43, PAL, and SECAM.
- External sync input and output can be set so that it will automatically switch according to the input selected.
- Switchable color temp: 6500K (broadcast), 9300K (pleasing picture), User preset (3200K to 10000K).
- Blue gun, underprescan and H/V delay capability
- On-screen menus for monitor adjustment/operation.
- Parallel remote control and Tally via 20-pin connector.



THE PROFESSIONAL'S SOURCE FOR PHOTO,

FOR ORDERS CALL:

800-947-9938
212-444-5038

OR FAX (24 HOURS):

800-947-9003
212-444-5001

**MOST ORDERS SHIPPED
WITHIN 24 HOURS**

OVERNIGHT SERVICE AVAILABLE

On the Web: <http://www.bhphotovideo.com>



SONY

UVW-1400A Betacam SP Recorder

The UVW-1400A is a non-editing VCR which delivers Betacam SP quality and offers features for a wide range of playback and recording applications. RGB and RS-232 interface make it especially ideal for large screen, high quality video presentation, scientific research and digital video environments.

- Ideally suited for work in computer environments, because RGB signals can be converted into component signals and vice versa with minimum picture degradation.
- 25-pin serial interface allows external computer control of all VCR functions based on time code information. Band rate can be selected from between 1200 to 38,400 bps.
- Built-in Time Base Stabilizer locks sync and subcarrier to an external reference signal as well as provides stable pictures.
- Built-in LTC Time Code and UB (User Bits) reader/generator.
- Equipped with two longitudinal audio channels.
- Auto repeat of entire or a specific portion of the tape.
- Built-in character generator can display VTR status, time code, self-diagnostic messages, set-up menu, etc.
- Control of jog, shuttle, playback, record, pause, FF and REV with the optional SVRM-100A Remote Control Unit.
- Composite and S-Video as well as component via BNCs which are switchable to RGB output. The UVW-1400A has two switchable function connectors and a Sync on Green.
- Built-in diagnostic function and hour meter.
- Initial set-up menu for presetting operational parameters.

UVW-1700G

Betacam SP Computer Graphics Frame Recorder

The UVW-1700G has all the features of the UVW-1400A (except foot switch control) plus it adds frame accurate video insert editing capability as well as RS-232 and RS-422 interfaces. These make the UVW-1700G ideal not only for conventional video program production but also for animation and computer graphics creation.

Same features as the UVW-1400A PLUS—

- Uniquely equipped with both RS-232 and RS-422 serial ports for versatile system integration. Both serial ports are easily accessed via the set-up menu. Built-in time code capability combined with sophisticated servo system ensures frame accurate insert editing (video only) when connected to computer-based editing systems (via RS-232 port) or RS-422 equipped edit controllers. Ideal VCR for animation and computer graphics creation, where frame-by-frame editing is indispensable.



UVW-1800 Betacam SP Editing Recorder

All the features of the 1400A PLUS—

- Optional UVR-60 allows remote TBC adjustment.
- RS-422 interface for editing system expansion.
- Two types of component output: via three BNC connectors or a Betacam 12-pin dub connector.

- Frame accurate editing is assured, thanks to sophisticated servo control and built-in time code operation. In the insert mode of the UVW-1800, video, audio Ch-1/2 and time code can be inserted independently or in any combination.



GENESISvfx

Special Effects and Lens Flare Plug-in for LightWave 3D and Studio MAX

Genesisvfx is a revolutionary special effects plug-in that takes basic properties of physics and harnesses them for use in both still and animated rendering. Genesisvfx can create lens flares, sparkles, glows, heat distortions, 3D particle clouds, gas clouds, explosions, and even flowers with complete animation control over every aspect of the effect. Genesisvfx eliminates the usual limitations of most comparable packages—point light sources or complex object linking are no longer necessary. With Genesisvfx you can link any number of objects of any type. The possibilities are limited only by your imagination! And this power has not been added at the expense of program complexity, indeed there are no lists of parameters with cryptic names and wherever possible real time previews are available to reflect the changes being made.

Genesisvfx incorporates a staggering feature set with advanced rendering options such as full field rendering on all effects (even glows, sparkles), analytic anti-aliasing, full animation of all effects, fractal noise, a completely new object flare effect that makes separate glow/sparkle/flame plug-ins a thing of the past, particle animation that sets a new standard, a wonderfully user-oriented interface with real time feedback at all possible occasions, FULL advantage of multi-processor systems (both in rendering effects and in user interface), unlimited layering capability, and blindingly fast performance. Full binary compatibility of files between the different versions (eg. create and load Genesisvfx effects interchangeably between LightWave and Adobe Photoshop) and much, much more.

For LightWave 3D (Intel).....	\$319.95	3D Studio MAX.....	\$339.95
For LightWave 3D (Alpha).....	\$369.95	For Photoshop (PC or Mac Specify).....	\$149.95



DISK ARRAYS for Mac and Windows NT

Using ATTO PCI Ultra SCSI accelerator cards and Seagate Ultra SCSI 16-bit hard drives, CTI disk arrays provide high data of up to 80 MB/sec to ensure smooth clean video without dropped frames. Especially designed for audio and video applications, Seagate disk drives employ embedded servo technology, eliminating the need for thermal recalibration. CTI disk arrays are fully tested for Windows NT and Power Macintosh systems and are available in fixed and removable configurations. With arrays from 3GB to 36GB and up to 180GB when daisy chained, CTI delivers the flexibility, performance and reliability at a price you can afford.

- Plug and Play • Hot swappable cannister • Multiple large power supplies • Efficient cooling and airflow
- ATTO RAID striping software for Windows NT or Macintosh • 68-pin active terminators and 68-pin system cables
- Push button SCSI ID selector • All arrays come with a five year limited warranty.



2 Bay Tower Fixed		2 Bay Tower Removable	
CTI-8FS 8.4GB Array with 2 Seagate Barracuda 4.2GB Ultra Wide drives (#ST34572W) and ATTO Single Channel SCSI card (18.2 MB/s sustained transfer rate).....	1699.95	CTI-8RS 8.4GB Array with 2 Seagate Barracuda 4.2GB Ultra Wide drives (#ST34572W) and ATTO Single Channel SCSI card (18.2 MB/s sustained transfer rate).....	2117.95
CTI-18FS 18.2GB Array with 4 Seagate Barracuda 9.1GB Ultra Wide drives (#ST39173W) and ATTO Single Channel SCSI card (28.2 MB/s sustained transfer rate).....	2115.00	CTI-18RS 18.2GB Array with 4 Seagate Barracuda 9.1GB Ultra Wide drives (#ST39173W) and ATTO Single Channel SCSI card (28.2 MB/s sustained transfer rate).....	2529.95
4 Bay Tower Removable		4 Bay Tower Removable	
CTI-36RS 36.4GB Array with 4 Seagate Barracuda 9.1GB Ultra Wide drives (#ST39173W) and ATTO Single Channel SCSI card (28.2 MB/s sustained transfer rate).....	4759.95	CTI-72RS 72.8GB Array with 4 Seagate Barracuda 18.2GB Ultra Wide drives (#ST118273W) and ATTO Single Channel SCSI card (28.2 MB/s sustained transfer rate).....	7380.95
CTI-36RD 36.4GB Array with 4 Seagate Barracuda 9.1GB Ultra Wide drives (#ST39173W) and ATTO Dual Channel SCSI card (39.9 MB/s sustained transfer rate).....	5354.50	CTI-72RD 72.8GB Array with 4 Seagate Barracuda 18.2GB Ultra Wide drives (#ST118273W) and ATTO Dual Channel SCSI card (39.9 MB/s sustained transfer rate).....	7974.95
CTI-36RS2 36.4GB Array with 4 Seagate Barracuda 9.1GB Ultra Wide drives (#ST39173W) and 2 ATTO Single Channel SCSI card (46.4 MB/s sustained transfer rate).....	5112.95	CTI-72RS2 72.8GB Array with 4 Seagate Barracuda 18.2GB Ultra Wide drives (#ST118273W) and 2 ATTO Single Channel SCSI card (46.4 MB/s sustained transfer rate).....	7732.50



NewTek

LIGHTWAVE 3D 5.5

3D Rendering and Animation Software for Broadcast Graphics

LightWave 3D is the easy way to create the most sophisticated 3D animation imaginable. It's intuitive, complete, easy-to-use layout and modeling system deliver the ultimate in creative control, not to mention flexibility. Unparalleled features for modeling, surfacing, lighting and animating are right at your fingertips. Raytracing, motion blur, MetaMotion, inverse kinematics (IK), Bones, field rendering, lens flares, compositing - they're all here. And with OpenGL and QuickDraw 3D support you can see your creations in real time. Add a robust plug-in architecture, and it's no wonder you find LightWave 3D in more Hollywood animation suites than any other 3D program. LightWave 3D is available for almost all platforms: Windows 95, Windows NT, Power Mac, DEC Alpha, SGI and Sun Microsystems.

LightWave 3D 5.5		Upgrades from LW 5.0 to 5.5		Upgrades from LW 4.0 to 5.5	
For PC (Intel).....	1599.00	From Intel 5.0.....	449.00	From Intel 4.0.....	599.00
For PC (DEC Alpha).....	1599.00	From DEC Alpha 5.0.....	449.00	From DEC Alpha 4.0.....	599.00
For Macintosh.....	1699.00	From Macintosh 5.0.....	549.00		
For SGI.....	2499.00	From SGI 5.0.....	899.00		

INSPIRE 3D

3D Art and Animation Software for Graphic Artists, Multimedia Developers and Web Designers (For Mac or PC)

Specifically designed to meet the demand of the graphics pro, Inspire 3D is a powerful program that lets you add a whole new dimension to your work by creating stunning print images, dynamic multimedia productions and slick web pages that just aren't possible in 2D. With Inspire 3D, you can model, animate and render 3D elements in any style and complexity. By adding texture, motion, lighting effects and more, your print materials will almost pop off the page. Use the images you create as single frame print graphics or as lower resolution animation files for multimedia or the web or choose from a library of pre-created images. And use the photorealistic or stylized animation images you create for real-time graphics applications, including VRML 2.0, for all kinds of projects.

- Compatible with Photoshop, QuarkXPress, Illustrator, Freehand, Director, and more. Create simple or complex animations, transform Illustrator files into animated 3D graphics, create killer photorealistic 3D or cartoon-style images and use pre-created or custom modeling.
- Supports 16 image and seven 3D model formats, gives you your choice of output with resolutions up to 8,000 x 8,000.
- Expandable modeling capabilities and a ton of plug-ins for specialized functions. Features like Spline-based modeling and MetaNURBs let you mold and manipulate objects in ways you never could before, then output them as hi-res images - fast. Use Inspire's library of designer images, create your own - or mix the two for interactive content.
- Quickly and easily create brilliant single and composite images and animations to design exciting web sites.
- Uses LightWave 3D's formidable rendering engine to put true photorealistic capabilities right on your desktop. Gives you 3D images the edge you're looking for.
- Revolutionary modeler lets you create any shape or form you dream up just by clicking on a few points. Then reshape, subdivide, clone, modify, reposition and control any object in 24-bit color and view it in real-time.
- Compositing capabilities let you to build sophisticated, layered images for print or animation and combine 3D elements with 2D images or multimedia. You can also use photographs or video with 3D elements and apply front projection mapping to make the elements accurately cast shadows against the photo or video image.
- Intuitive interface with on-screen tutorial get you up and running fast. Want the easiest way to composite? Need a tip on shadowing? Curious about surfacing options? The on-screen tutorial is an encyclopedia reference, teacher and consultant that not only gets you up and running quickly, but helps you be more productive every time you work.
- Includes a complete library of over 1,600 models, objects and other items for you to use alone or in combination with other graphic elements.

Inspire 3D for Windows.....	385.00	Inspire 3D for Macintosh.....	385.00
-----------------------------	--------	-------------------------------	--------

Adobe AFTER EFFECTS 3.1

Compositing, Motion Graphics & Special Effects for Mac or Windows

After Effects 3.1 provides the power and features required by film makers, video producers, editors, graphic designers, multimedia professionals and web developers to produce unlimited composites, fluid animations and sophisticated special effects. Available for Mac and Windows, After Effects is tightly integrated with the Adobe product family, so if you work with Premier, Photoshop, or Illustrator, you already have the skills, shortcut know-how, and hardware to make After Effects a seamless, powerful extension of your creative arsenal. Turn your computer into a motion-graphics studio and put awe-inspiring action into your work.

SOPHISTICATED COMPOSITING:

- Combine digitized materials from any source to create sophisticated composites and traveling mattes using transparency, complex masks and alpha channels. Animate Photoshop layers and Adobe Illustrator art with direct import capabilities.

MOTION GRAPHICS:

- Position and animate layers with unlimited keyframes and sub-pixel accuracy. View and edit your spline-based motion paths on-screen. Ensure super smooth motion at any speed with field-rendering and true motion blur.

SPECIAL EFFECTS:

- Use use plug-in effects ranging from precise color correction filters to wipes and blurs, and even Photoshop filters. You can also animate each effect independently over time.

AFFORDABLE QUALITY:

- Create anything you can imagine. Get top-quality motion graphics for film, broadcast or CD-ROM—at a fraction of the cost of a dedicated system. **\$599**



Artel Boris Effects 3.5

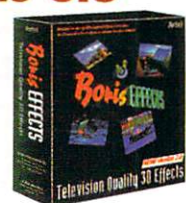
A multi-channel DVE generator, complete with intraframe interpolation, matte manipulation, and multiple keyframes, Boris Effects lets you to create your own custom moves. Boris ships with a keyframe library of over 150 customizable effects including cubes, picture-in-picture, chroma keying, tilting, soft edges, masks, filters and compositing of unlimited track of video and graphics. Effects can be saved or used with different video source clips. Create 3D flying logo effects from PICT, TIFF, bitmap, VFW and QuickTime files using an embedded alpha channel. Other features include borders and drop shadows which can be colorized and made soft and translucent, as well as control over camera position and light source with specular highlights. Based on a plug-in architecture, Boris closely integrates into all of today's popular non-linear systems. Once installed, it is easily accessed between their transitions and filters menu. It is not a background application and no extra memory is required.

- Blur and bevel filters.
- Control of image scale (size), positioning, depth and opacity.
- 3D effects with depth control to create cubes or slabs with up to 6 different videos, pics or colors on each of the 6 faces.

For Adobe After Effects (Specify Mac or Windows NT).....	349.95
For Adobe Premier (Specify Mac or Windows 95/NT).....	395.00
For Ulead Media Studio Pro 5.0.....	395.00
For Fast VM-Studio Plus.....	395.00
For in:sync Speed Razer.....	395.00

- Variable pivot points for unique rotation control.
- Add keyframeable specular and ambient light to your effect.
- Cropping with full softness control of the edges and blend for really smooth soft wipe type of effects.
- Includes a free year of upgrades and full tech support!

For Media 100.....	549.95
For Avid Mxpress NT.....	549.95
For Discreet Logic.....	749.95
For Avid Xpress (Macintosh).....	749.95
For Avid Media Composer.....	749.95



VIDEO and PRO AUDIO



TO INQUIRE ABOUT YOUR ORDER:
800 221-5743 • 212 239-7765
OR FAX 24 HOURS:
800 947-2215 • 212 239-7549

New Address:
420 Ninth Ave. (Bet. 33rd & 34th St.)
New York, N.Y. 10001

DPS PVR-2500 'Perception' Digital Video Recorder

The Heart of an Advanced Digital Audio/Video Workstation

The PVR-2500 offers powerful features for awesome animation, morphing and rotoscoping capabilities. With features like 720 x 480 resolution, 10-bit 2x oversampled video encoding, better than D1 scaling, component and S-video outputs, multi-processor support and integrated FAST SCSI-2 controller, it empowers your computer to rival the finest professional production studios.

- Full-length PCI card with integrated FAST SCSI-2 controller.
- Multi-format virtual file system ensures complete integration with your Windows NT applications. Any acquired video or computer generated Perception video clips appear simultaneously in many different file formats including TARGA, SGI, BMP and IFF. Perception is compatible with Lightwave 3D, Studio Max, Softimage and others.
- Performs real-time interpolation of 30 fps video to 24 fps film rates or vice versa. This means that it is also at home on the Hollywood movie set as well.
- Outputs broadcast quality 720 x 480 resolution. Dynamic range is in excess of D1 scaling so images are brighter, have more color and greater spatial resolution than ever before. Component, composite and S-Video outputs are provided via the included breakout cables.
- VCR control simplifies the task of batch digitizing and recording. In this mode, the PVR-2500 can read SMPTE time code from the source deck.
- Includes DPS Lockstep plug-in to provide significant control over 3D Studio MAX
- Coupled with the AD-2500 component video capture card, the PVR-2500 becomes a broadcast-quality digital disk recorder. It delivers unsurpassed picture quality, and storage capacity is limited only by the size/number of attached SCSI hard drives.
- The AD-2500 has component, composite and S-Video inputs for real-time recording. Captured video can also be exported as sequential RGB files for rotoscoping and other compositing applications
- When used with the AD-2500 capture card, a sound card, editing software & one or more SCSI drives, the PVR-2500 becomes a non-linear editor of unparalleled performance – an unbeatable price.



PINNACLE GENIEPLUS

Post-Production System on a Single PCI Card

Based on Pinnacle's EMMY award-winning special effects technology, GeniePlus is a complete desktop post-production system that includes a 3-D DVE/switcher, advanced character generator, fast still-store and a dynamic paint system – at a price you can afford. Equipped with an incredible array of features on a single PCI card, GeniePlus lets you create your own stunning effects, including page turns, water ripples and spheres with uncompromised 4:2:2 digital quality. The full-function 3-D DVE provides ultra-smooth motion and no breakup (pixelation) when pictures are sized or rotated. You'll be able to create exciting warp effects with lighting, trails, shadows and borders faster and easier than ever before.

miro DC-30 plus PCI Capture Card for Windows 95/NT

The DC30 plus lets you capture, edit, add special effects or titles to your video, mix CD-quality audio, and then output the final cut to video tape. The DC-30 plus also offers fast plug and play installation and easy to use software so you'll be producing studio quality video in minutes. It even analyzes your system and automatically configures itself to provide the optimum video quality.

- The DC-30 is a PCI Bus mastering card that delivers a 6MB per second sustained video data transfer rate for high quality video capture. PCI Bus mastering ensures CPU bottlenecks don't impede the performance of the PCI bus, thereby limiting the reachable video transfer data rate.
- 2.4:1 compression ratio (adjustable up to 32:1). A lower compression ratio means a better final video image quality. Compression ratios under 4:1 are considered to be "broadcast quality."
- Real-time video overlay displays the video in real-time on the computer monitor during capture and video editing process eliminating the need for an external video monitor.
- Full NTSC, PAL, SECAM, PAL M for worldwide compatibility.
- Audio and video capture is synchronized to achieve perfect lip sync. (Capture from 8-bit mono 11kHz to 16-bit stereo 44.1kHz).
- Hardware acceleration of Adobe Premiere provides almost instant display of video "thumbnails" in the construction window (under one second). Acceleration also reduces the time to create "previews" and final video clip with "make movie".
- Bundled with Adobe Premiere 4.2 full version, Photoshop 3.05 LE and Asymetrix 3D/FX animation software.



DC-30 plus for Windows\$729.00
NEW! DC-50 Same as DC-30 plus with component in/out\$699.00

Miro DC-30 plus Turnkey System:

- 220-watt midtower case • Pentium 233 MHz MMX processor • PCI motherboard with 512K cache
- Diamond Stealth 3D 3000 4MB DRAM PCI display card • 64MB of RAM • Quantum 3.2 GB IDE system drive
- Seagate (Barracuda) 9GB SCSI-2 FAST/Ultra-wide hard drive • Adaptec AHA-2940UW FAST/Wide SCSI-2 controller
- 3.5" floppy drive • Teac CD-532E 32X EIDE internal CD-ROM drive • Altac-Lansing ACS-43 2-piece speaker system
- Focus 2001A keyboard • Microsoft MS mouse • Viewsonic G771 17-inch 1280 x 1024 SVGA monitor
- Windows 95 • Miro DC-30plus video/audio capture card • Adobe Premiere 4.2 (full version) editing software, Adobe Photoshop 3.05 LE imaging software and Asymetrix 3-D/FX animation software\$3495.00

DV-300 IEEE 1394 Digital Video Capture Card

A digital video capture, editing, and playback solution for Windows 95/NT and MacOS, the DV-300 is built around an intuitive software application that offers frame-accurate DV camera control, uncompromised image quality, and the ability to intelligently search digital videotapes for individual scenes. Additionally, the DV300 differentiates itself by providing a built-in SCSI port for connection to high speed drives.

DV-300 Hardware:

- PCI board with bus mastering interface
- Includes 1394 cable
- One internal and two external DV connections
- Bundled with Adobe Premiere 4.2 LE
- Convert your DV data for editing with other miroVIDEO editing adapters (e.g. miroMOTION DC30, DC30 plus.)

DV-300 DVTools Software:

DVTools automatically scans the DV tape and finds scenes in auto and out points. The Camera Controller allows for previewing before down loading any data. Scene locations with timecode are organized in the drag-and-drop Capture Gallery. Scenes can be trimmed so only the video you want is captured, saving you valuable hard drive space. Once you have arranged the scenes to edit, DVTools will automatically cue the camera and capture them.

Segments can be arranged for a cuts only production, or loaded into Premiere for effects and transitions. miroINSTANT DV, a plug-in for Premiere renders only effects and transitions, saving up to 50% of your hard drive space by not re-rendering the video clips. The video and the effect segments are then stored as individual video files. When production is finished, output to the camera through the IEEE1394 link. From Premiere, miroINSTANT DV automatically prints files back to tape in one pass, overcoming the 2 GB movie size limitation.

FAST DV Master

Unlike software-based DV systems that can be as slow as six times real-time, DV Master incorporates Sony's DVBK-1 DV hardware CoDec to guarantee lossless transmission at top speed. With just one cable you can transfer video, sound and machine control signals in real-time. Also allows the display of live video during "capture", as well as at any time during the editing process. You can scrub in or trim the timeline, and then preview it in real-time at full-screen, full-motion on your video or computer monitor. Another advantage of having the Sony DVBK-1 on the board, is that it allows the DV Master to act as a real-time video transcoder. Using the supplied breakout box, you can simultaneously convert analog composite, S-Video and component into digital and vice versa. This is ideal for archiving analog footage onto digital as well as for mixing analog and digital footage when editing. It also allows you to transfer edited digital footage directly to S-VHS or Betacam SP without having to first go back to the camera.

DV Master w/Ulead Studio Pro 5.0\$2299.00
DV Master w/InSync Speed Razor DV Software\$2999.00

canopus DVREx-M1

The Complete DV Digital Video Editing System

The DVREx-M1 is a hardware and software bundle that offers a complete solution for capture, output and editing of DV (Digital Video) signals. Equipped with Sony's DVBK-1 hardware DV codec, a breakout box and Ulead's Media Studio Pro 5.0, the DVREx-M1 provides real-time capture and output of DV signals from your camera or VCR via the IEEE1394 port, or converts any analog video and audio to DV. The system also includes Rex Edit software so you can control your DV camera or deck, batch capture video and audio, add new audio tracks and scrub in real-time. DV editing has never been so fast, easy and flexible!

Hardware Features:

- High quality, scalable video windows displays real-time, full-screen video during capture, editing and output.
- During analog capture and output, video characteristics like brightness, contrast, saturation etc. can be manually set.
- When incorporating effects, an optimized hardware DV codec cuts rendering time up to 25%.

Rex Edit Software Features

- Manual and Batch Capture:
 - Capture up to 20 minutes (4GB) into one AVI file
 - Seamlessly capture long DV segments in one pass (over 20 minutes)
 - Capture audio from single of multiple DV channels if desired
 - Frame accurate camera control when defining a batch list of video clips
 - When batch capturing, camera automatically seeks to clips
 - Batch clips can be stored in one or multiple AVI files

Editing:

- Easy to use drag-and-drop interface with audio and video timeline. Manually scrub through the timeline using a Microsoft IntelliMouse
- Real-time video insert and audio scrubbing
- Video can be output directly from the timeline with seamless playback
- Works together with Ulead's MediaStudio Pro 5.0 (bundled with DVREx-M1) for effects and titling

Multi-Channel Audio Input and Output with Mixing:

- Capture and output native DV multi-channel audio
- Audio is perfectly synced with video during production and output
- Overcomes AVI single channel limitations with real-time audio mixing
- Multi-channel audio requires no rendering for real-time adjustment and output

Available with or without Ulead software



TARGA 1000/MCXpress

Professional Video Production Workstation

Incorporating the award-winning TARGA 1000 video card and Avid MCXpress NT non-linear editing software, this fully-configured workstation meets the needs of production professionals, corporate communicators, educators and Internet authors.

TARGA 1000 Features:

- The TARGA 1000 delivers high processing speed for video and audio effects, titling and compositing. Capture, edit and playback full-motion, full-resolution 60 fields per second digital video with fully synchronized CD-quality audio.
- Compression can be adjusted on the fly to optimize for image quality and/or minimum storage space. Has composite and S-video inputs/outputs. Also available with component input/output (TARGA 1000 PRO).
- Genlock using separate sync input for working in professional video suites
- Audio is digitized at 44.1kHz or 48kHz sampling rates, for professional quality stereo sound. Delivers perfectly synchronized audio and video.

MCXpress Features:

The ideal tool for video and multimedia producers who require predictable project throughput and high-quality results when creating video and digital media for training, promotional/marketing material, local television and cable commercials, CD-ROM and Internet/intranet distribution. Based on Avid's industry-leading technology, it combines a robust editing functionality with a streamlined interface. Offers integration with third-party Windows applications, professional editing features, powerful media management, titling tool and a plug-in effects architecture. It also features multiple output options including so you save time and money by reuse media assets across a range of video and multimedia projects.

TARGA 1000/MCXpress Turnkey Systems:

- 300-watt, 6-Bay Full Tower ATX Chassis
- Pentium ATX Motherboard with 512K Cache
- Pentium II-300 MHz Processor
- Matrox Millennium II AGP 4MB VRAM Display Card
- 64MB 10ns 168-Pin (DIMM) S-DRAM
- Quantum Fireball 6.4GB IDE System Drive
- Seagate Barracuda External 9.1GB SCSI-3 Ultra Wide Capture Drive
- Adaptec AHA-2940UW Ultra Wide SCSI-3 Controller Card
- Teac CD-532E 32X EIDE Internal CD-ROM Drive • 3.5" Floppy Drive
- Altac-Lansing ACS-48 3-Piece Deluxe Speaker System
- Viewsonic G771 17-inch (1280 x 1024) Monitor (0.27mm dot pitch)
- Focus 2001A Keyboard • Microsoft MS Mouse
- Windows NT 4.0 Operating System Software
- Avid MCXpress for Windows NT
- Truevision TARGA 1000 or 1000 Pro Video Capture Card
- With TARGA 1000\$5995.00
- With TARGA 1000 Pro (component input/output)\$6495.00



SEVEN DAY CUSTOMER SATISFACTION GUARANTEE

Circle #216

SECURE
ON-LINE ORDERING
24 HOURS!
A DAY
www.dvddirect.com



DVDDIRECT

Since 1982

DESKTOP DIGITAL VIDEO • 3D DESIGN & ANIMATION • MUSIC, MIDI & AUDIO • VISUAL COMPUTING
DIGITAL CONTENT CREATION • STORAGE SOLUTIONS • MULTIMEDIA AUTHORIZING • SYSTEM CONFIGURATIONS

WIN
MAC

Oxygen 402 will enable you to design and manipulate complex models and scenes in real-time with features like perspective-correct texture mapping, Gouraud shading, double buffering & more. Oxygen cards are pure creative fuel for 3D acceleration in LightWave or 3D Studio MAX.

OXYGEN 402 [DY-P5004] \$899
3Dlabs OXYGEN RPM [3D-L5001] \$1,299

WIN
MAC

LifeForms 3
Life Forms®3 makes creating realistic figure movement for 3D animation a fast and easy reality. With Life Form's intuitive interface and powerful feature set, you'll work in a natural workspace built specifically to foster real movement.

Credo Interactive [CR-I2001] \$279

WIN
MAC

Aura by NewTek combines the best features of leading paint, compositing, cell animation, 2D animation, special effects and character generation into one very powerful production tool.

Aura [NT-K3003] \$799
NewTek Aura & Wacom ArtZII 6x8 \$799

WIN
MAC

Inspire 3D includes most of LightWave 3D's features at a fraction of the price. With one of the best interactive tutorials we have ever seen with a product, Inspire 3D gets a permanent spot on our highly recommended list.

NewTek [NT-K2010] Under \$400

WIN
MAC

World Construction Set 4.0
What's new: 3D Studio, LightWave and DXF object import and rendering, animated sequences for trees and foliage, faster rendering, animated effect parameters and Terrafactors™ and more!

Questar Productions [QS-T2003] \$649

WIN
MAC

Animal Kingdom
150 of the most dangerous 3D animals around. You'll find some of the friendliest also. Detailed 3D models that include Dinosaurs, Sea Life, Mammals, Birds, and Reptiles.

Dedicated Digital Imagery [DD-I3007] \$124

WIN
MAC

Martin Hash's Animation Master98 version 6
Everything you need to create 3D computer graphics! Animation Master includes sculpting features, animation tools and superb rendering.

Hash Inc. [HA-S3002] \$176

WIN
MAC

Rhinoceros or "Rhino 3D" is a conceptual design and modeling tool for industrial, product and scene designers. Rhino's robust spline-based 3D models can be used in most rendering and animation products, including 3D Studio MAX and LightWave 3D.

McNeel & Associates [RM-N2001] \$369

WIN
MAC

Painter 5.5 Web Edition
New web authoring enhancements allow you to divide your images with precision for optimized download time with the new Image Slicing tool. Assign URL's to any image slice or floating layer for quick client-side image maps.

MetaCreations [ME-T2011] \$279

Mon. - Fri. 8am-8pm CT, Sat. 10am-4pm CT
888-383-5933
TOLL FREE [888-DVD-LW3D]
24 Hour Order Fax217-356-4312
Customer Service217-355-2785
Mon. - Fri. 9am-5pm CT
E-Mailsolutions@dvddirect.com
Address3001 Clark Road
Champaign, IL 61822
International Sales217-355-2785

www.dvddirect.com
ON-LINE CATALOG AND
SECURE ORDERING SYSTEM



ANY PLUG-IN

WITH THE PURCHASE OF
LIGHTWAVE 3D 5.6

FULL VERSION ONLY. LIMIT ONE.
50% OFF PLUG-IN PER PURCHASE.



Digital Video Direct 3001 Clark Rd., Champaign, IL 61822. OUR POLICY: VISA, MasterCard, American Express & Discover accepted. UPS & FedEx shipping available. No surcharge on credit card orders. Credit card is not charged until order ships. \$5.50 COD fee, cash only, please call for instructions on COD orders over \$1000. Personal and company checks accepted, prepayment only. University, school and government purchase orders are accepted. All purchase orders are subject to credit approval. Prices are subject to change without notice. Call for current pricing. We are not responsible for typographical errors. 15% restocking fee for items returned and not exchanged for same. Returns accepted within 10 days of invoice date. Customer is responsible for all shipping charges. For your protection we check credit cards thoroughly. (NTK3812-0611)



NewTek

Authorized LightWave 3D Training Center

**NewTek is pleased to
announce the
opening of its
New York
training
center**

**Beginner,
Intermediate
and Advanced
Level Courses**

Future Media Concepts

Training for the 21st Century
Information and registration online at

www.fmctraining.com Tel: 212.888.6314



Circle #218

LIGHTWAVE 3D



NewTek
AUTHORIZED
TRAINING CENTER



EXCHANGE
animation training

**Register now for Animation
Career Training Classes in the
San Francisco Bay Area!**

- Full Time & Part Time
- Corporate Training
- Intern Program
- Youth Program

www.exchange3d.com

**999 E. Stanley Blvd. Suite B
Livermore, CA 94550**

(925) 371-4500

Circle #219

VIDEO TOASTER & FLYER SYSTEMS BUY - SELL - TRADE

New and Used

AMIGA COMPUTERS
Amiga Parts & Repairs

New DV Products !
Canon DV Cameras
Radius & Fast DV Editing
Custom NT DV Workstations

FREE video accessory & bulk
videotape catalog available

Ph. 610-372-1010

Fax 610-378-9606

E-mail econnect@ptd.net

Call, Fax, or E-mail us with
your list of items to sell,
trade, or purchase

www.electronicconnection.com

ELECTRONIC CONNECTION

635 Penn. Avenue
West Reading, PA 19611

"Our 15th Year in Business"

Circle #220

*Serving the professional video and computer
graphics marketplace since 1994.*

*Sales, service, support and
training for:*

NewTek

*Lightwave 3D, Toaster, Flyer, White Board,
Caliber, Aura, Inspire 3D*

Amiga

AmigaDOS 3.5 coming!

Carrera Workstations

Used for Titanic, the movie

Intel Workstations

Dual processors and OpenGL cards

PC-Amiga Networks

Let Lightwave and Aura work with the Flyer

LET'S TALK

Ask about our new training tapes

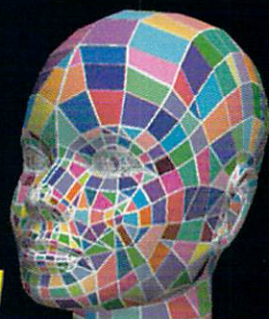
(800) 411-3332

videology@snet.net

www.videology.org

Circle #221

**The Next and ONLY Way
You'll Map Textures!**



TrU-V

Analytical Mapping System
Patent Pending

**Includes LightWave
UV Shader and
Built-in UV Editor**

P O S I T R O N

www.3dgraphics.com

402.330.7011

Circle #222



**T.S. Computers
& Video**

818-760-4445 www.vgn.com

11300 Hartland Street North Hollywood CA 91605

NEWTek
INCORPORATED

FLYER



LIGHTWAVE 3D

T.S. Computers has been addressing the needs of video professionals and animators for over fifteen years. We are a full-service dealer, and our professional staff looks forward to providing you with the tools you need to get the job done!

AMIGA **RAPTOR**
"PERCEPTION"
VIDEO RECORDER

Circle #223

Upgrading... used gear for sale.

Sony UVW-1800, Sony EVW-9850.
Sony EVW-300's with 13X Lens.
Videssence SRGB Studio Lights.
SADIE Digital Audio Workstation.
20" & 13" Professional Panasonic
Monitors.

Amiga 4000 040 Toaster/Flyer, dual
tower, 40 Gigs on-line, TBC IV, 270
Syquest drive.

Amiga 4000, Toaster 3.5, TAO
Editizer, w/ Sunrize Studio 16, PAR
card.

Pinnacle Aladdin, 166Mhz Host PC,
TAO Editizer, 2.6 Gig Vertex.

D-Vision Pro 2.2 NLE
Professional Bogen Tripods...

More gear available!

CALL 1-800-689-1069

for asking price and equipment
listing and we'll fax you,
or check out

www.latentimage.com

E-Mail:

prod@latentimage.com

Circle #226

**CUSTOM MODELING
VISUALIZATION
3D MODELS**

RECON3D™
3D OBJECT COLLECTION
lwo 3ds obj dxf 3dm

www.artrecon.com



TO ORDER
CALL TOLL FREE
1- 877- RECON3D

Art Recon Inc.

E-mail: info@artrecon.com
Tel: 403-289-2454 Fax: 403-289-2050
Calgary, Canada

Circle #224

NEWTekNIQUES

Advertise
in the

NEWTekNIQUES

Classifieds

For Rates and
Information Call:

Joe Tracy

800-854-3112,

ext. 683

AURA is Here!
\$100 off Aura 1.0 for registered
LightWave 5.5 owners!

Graphics Studio Bundle

All the tools you need:
Lightwave 5.6, Aura 1.0,
Film Grain & Motion Pack
Call for prices.

Lightwave 5.6

Inspire 3D

Aura

Calibar

animation systems

3D Plugins

VIDEO CARDS

books-tapes-CD's

SUN

MIPS

Amiga

WIN95/NT

Power MAC

DEC Alpha

Silicon Graphics

Toll Free: 1-800-567-8481

Toronto: 1-416-690-3301

Web: www.videolink.ca

NewTek Centre for Canada

VIDEOLINK INC.

animation canada

NewTek

Circle #225

USED AMIGA EQUIPMENT FOR SALE

- 4000-040 desktop's \$850
- PAR cards \$525; TBC-IV's \$525
- Toasters \$350 up; Flyers \$2195
- Sunrize AD516 cards \$495
- 3000's \$245 up; 3000T-040 \$750
- 2000's/accelerators/tower kits
- 1200's \$260

**BUY/SELL USED/NEW
AMIGA SYSTEMS**

WE REPAIR ALL AMIGAS

HARDDRIVERS CO.

407-636-3393 hrgreen@worldnet.att.net

Circle #227

Fast, Easy

Lip-Synching

for Lightwave and Inspire 3D

Now you can create
your own
Talking Characters
in minutes...

Mouth

Directly from a
sound file!



See and Hear **Mouth**
at www.talking-fish.com

Circle #228

ADVERTISERS

COMPANY.....	PG#	RSN #
3D Exchange	45	219
ACS Computer	47	229
Art Recon, Inc.	46	224
B & H Photo Video	40-41	215
B & H Photo Video	42-43	216
Blevins Enterprises, Inc.	25	208
Credo Interactive, Inc.	cv. 4	200
Desktop Images.....	3	202
Digital Video Direct.....	44	217
Dimensional Expressions.....	17	206
DVS Direct.....	47	231
Dynamic Realities	cv. 2	201
Electronic Connection	45	220
Epic Software.....	26	210
Future Media Concepts.....	45	218
HardDrivers Co.	46	227
Latent Image Productions	46	226
Nova Design, Inc.....	cv. 3	230
OZware	27	211
Positron Publishing.....	45	222
Questar	17	207
SafeHarbor Computers.....	38-39	214
T S Computers	46	223
Talking Fish Productions	46	228
Videolink, Inc.....	46	225
Videology, Inc.....	45	221
Washburn University	15	205

Atlanta, Georgia

Video Workstations

Trinity
Now Shipping

Newtek Flyer
Non-Linear Editor



Media 100

Lightwave 3D

TRY BEFORE YOU BUY!

ACS Computer & Video Specializes in computer based video systems sales, service and support.

Our technicians have been in the business for years and have hands-on knowledge in all aspects of Amiga, Macintosh and PC based editing systems. We build custom graphics and video workstations and provide training in the use of all software we carry, including Newtek Lightwave 3D, Adobe Photoshop and Adobe AfterEffects. Trinity, Media 100 and Flyer suites are always available for demo.

Repairs and upgrades on all Amigas

All components in stock and available for exchange. Loaner Toasters available!

Amitrace Computer Systems
ACS Computer & Video
5344 Jimmy Carter Blvd. Norcross, GA 30093

Ph: (770) 263-9190

Fax: (770) 263-7852

Toll Free:
1-800-962-4489
(orders only)

Circle #229

DVS-Direct 800-379-7267

69 Beaver Dr. Suite 110 DuBois Pa 15801 Your Direct Source for Desktop Video
PH 814 371 5640 FAX 814 371 2033

ADD A



To Your Toaster System

DVS Direct is Your #1 Source for All Video Toaster and Flyer Products. We use the Flyer and understand the needs of the Video Production Professional.

DVS Direct is a Full Service Newtek Authorized Dealer.

Seagate

4, 9, 23 GB Video Drives

NEW
Lower Prices
On Toaster /Flyer
Turnkey Systems
Call for Details

**Snapshot for
Newtek's Video
Toaster and
Flyer**



Only \$69.95

Snapshot automates the task of grabbing still photos to Toaster Framestores or Flyer stills and includes a GPI foot control. Snapshot is perfectly suited for the wedding and event producer needing to digitize large numbers of photographs quickly and easily. The foot controller allows the user to keep their hands free to operate the camera and handle the photos. The user need not touch the keyboard or mouse until done with the digitizing process. Snapshot automatically names the stills or framestores in the order they are grabbed. This allows the user to grab a large number of pictures in the order needed and then move them quickly into a project. Snapshot now works with all versions of Toaster Software. Requires Arexx.

Circle #231

December/January 1999 NewTechniques 47
www.newtechniques.com

MOJO

MUSINGS FROM OUR ACE LIGHTWAVE ANIMATOR



The Word Processor is Mightier Than the Cray

Two High-Tech Films Teach Us the Same Low-Tech Lesson (Again)

People often marvel at how wonderful new technology is. They rave about living in a world with cellular phones, space shuttles, and ultra-fast computers. Upon reflection, however, I have come to realize that our praise should not be directed at the technology itself, but at what is being done with it. In other words, we should be thankful not for the tool, but the product.

Two recent products of high technology are the films *What Dreams May Come*, which explores concepts surrounding death, and *Pleasantville*, a clever coming-of-age tale which celebrates life. While many modern films have capitalized on new technology to tell the same, tired stories on a grander scale, *Dreams* and *Pleasantville* bring us visions that would have been impossible without it. However, despite these films being high-tech cousins, they hardly see eye to eye and teach us a tried-and-true lesson at the most low-tech of levels.

Dreams is about how a man dies and must literally go through heaven and hell to find peace in the afterlife. The film offers absolutely breathtaking visuals, which may very well be the most

striking images ever put on film. Classic works of art are brought to life on screen as three-dimensional, moving landscapes. Robin Williams actually walks, swims, and flies through impressionist oil paintings and other fantastic environments that rival the most vivid of dreams.

Unfortunately, even the sweetest eye candy can be sour at the core. I'd be willing to bet a hefty sum that a panel of blind critics would give this movie a "stinker of the year" award. Sure, it looked great and, yes, it took my breath away, but in the end it simply converted that breath into a lot of hot air. While the imagery was busy amazing me, the story was busy going nowhere. Perhaps this film's greatest tragedy is that it betrays its powerful, grandiose

premise by serving up a Hollywood ending so simplistic that it would make even Disney blush.

Pleasantville, on the other hand, takes a simple, seemingly one-dimensional concept and extrapolates it into a far deeper and emotionally compelling film than anyone would guess from the premise. Two siblings are taken from the real world and zapped into the utopian world of Pleasantville, the living embodiment of a black-and-white 50s sitcom (a la "Leave it to Beaver"). The brother, who is a fan of the show, does his best to blend into the two-dimensional world of stereotypes and not disrupt the fantasy. Meanwhile, his more rambunctious sister decides to teach the townsfolk a few things they would never even talk about on TV in the 50s. As the fictional characters of Pleasantville learn what it means to truly be alive, they slowly transform into color—as do bits and pieces of the town around them.

While the combination of color and black-and-white elements in a single piece of film is nothing new, the scale in which it is achieved both technically and emotionally is to date unparalleled. What was previously employed as simply a gimmick in music videos serves as a major plot device in *Pleasantville*. In addition to serving the story, the juxtaposition of black-and-white and chroma imagery in this film

Unfortunately, even the sweetest eye candy can be sour at the core. Bad scripts, no matter how much you dress them up, are still bad scripts.

BY MOJO

teaches the audience to appreciate the beauty of color in much the same way the characters in the film learn. One particularly moving scene introduces a book of classic paintings to a shopkeeper interested in art. The entire frame, like most of the film up to this point, is black and white; only when the book is opened do we see color. The hues and tones of each Picasso and Rembrandt leap off the screen and are seen for what seems like the first time to all of us.

Inevitably, *Pleasantville*'s citizens learn that being human has a dark side and coping with it is part of the difficult journey out of the Garden of Eden (how ironic that the paradise of Eden is portrayed as the black-and-white, lifeless universe).

Just a few years ago, neither of these films could have been made. While both rely heavily on the latest special effects to tell their story, only one of them recognizes that the story is the movie. Bad scripts, no matter how you dress them up, are still bad scripts.

I'm glad the latest technology is being put to good use. I would not be happier if every military supercomputer was ripped from the missile silos and stuck on a render farm. But while filmmakers should be encouraged to embrace the latest and most powerful new graphics superstations, perhaps they need to get better acquainted with that clunky old 286 running a copy of WordPerfect!

Get **FREE INFORMATION** about the products & services in this issue!
Simply circle the number on the card that corresponds to the
Reader Service number shown on the ad or editorial copy that
interests you, and drop the card in the mail today!

It's Fast ..
It's Easy ..
**IT'S
FREE!**

Use the cards
to the right
to get free
information,
brochures,
special offers,
and sometimes
discounts!

1. Fill out the card.
2. Circle the desired numbers.
3. Mail or fax the card today!

READER SERVICE CARD

New Techniques

131 W 1st St., Duluth, MN 55802-2065
Phone: 218-723-9477 • Fax: 413-637-4343

SIGNATURE _____

Date _____

Name (PLEASE PRINT) _____

Title _____

Company Name _____

Company Address _____

City _____

State _____ Zip _____

Phone (_____) _____

Fax (_____) _____

Internet/E-Mail Address _____

AN ADVANSTAR ★ PUBLICATION

FREE INFORMATION

DECEMBER '98 Expires February '99

100	120	140	160	180	200	220	240	260	280
101	121	141	161	181	201	221	241	261	281
102	122	142	162	182	202	222	242	262	282
103	123	143	163	183	203	223	243	263	283
104	124	144	164	184	204	224	244	264	284
105	125	145	165	185	205	225	245	265	285
106	126	146	166	186	206	226	246	266	286
107	127	147	167	187	207	227	247	267	287
108	128	148	168	188	208	228	248	268	288
109	129	149	169	189	209	229	249	269	289
110	130	150	170	190	210	230	250	270	290
111	131	151	171	191	211	231	251	271	291
112	132	152	172	192	212	232	252	272	292
113	133	153	173	193	213	233	253	273	293
114	134	154	174	194	214	234	254	274	294
115	135	155	175	195	215	235	255	275	295
116	136	156	176	196	216	236	256	276	296
117	137	157	177	197	217	237	257	277	297
118	138	158	178	198	218	238	258	278	298
119	139	159	179	199	219	239	259	279	299

READER SERVICE CARD

New Techniques

131 W 1st St., Duluth, MN 55802-2065
Phone: 218-723-9477 • Fax: 413-637-4343

SIGNATURE _____

Date _____

Name (PLEASE PRINT) _____

Title _____

Company Name _____

Company Address _____

City _____

State _____ Zip _____

Phone (_____) _____

Fax (_____) _____

Internet/E-Mail Address _____

AN ADVANSTAR ★ PUBLICATION

FREE INFORMATION

DECEMBER '98 Expires February '99

100	120	140	160	180	200	220	240	260	280
101	121	141	161	181	201	221	241	261	281
102	122	142	162	182	202	222	242	262	282
103	123	143	163	183	203	223	243	263	283
104	124	144	164	184	204	224	244	264	284
105	125	145	165	185	205	225	245	265	285
106	126	146	166	186	206	226	246	266	286
107	127	147	167	187	207	227	247	267	287
108	128	148	168	188	208	228	248	268	288
109	129	149	169	189	209	229	249	269	289
110	130	150	170	190	210	230	250	270	290
111	131	151	171	191	211	231	251	271	291
112	132	152	172	192	212	232	252	272	292
113	133	153	173	193	213	233	253	273	293
114	134	154	174	194	214	234	254	274	294
115	135	155	175	195	215	235	255	275	295
116	136	156	176	196	216	236	256	276	296
117	137	157	177	197	217	237	257	277	297
118	138	158	178	198	218	238	258	278	298
119	139	159	179	199	219	239	259	279	299



PLACE
STAMP
HERE

New
TECHNIQUES

PO BOX 5032
PITTSFIELD MA 01203-5032
USA



PLACE
STAMP
HERE

New
TECHNIQUES

PO BOX 5032
PITTSFIELD MA 01203-5032
USA



Psssssst!

Want to know some industry secrets?

Need some inspiration to sharpen your competitive edge?

Hear from
industry experts,
meet some new
ones, and maybe
even become
one...with

NEWTekNIQUES
magazine. From
news and
information to
tutorials and
insider tips,
NEWTekNIQUES
will enhance
your expertise
and spark your
imagination!

**Subscribe
right now!**

SUBSCRIPTION CARD

NEWTekNIQUES

131 W 1st St., Duluth, MN 55802-2065
Phone: 218-723-9477 • Fax: 218-723-9433

U.S. & POSSESSIONS\$32.00

CANADA & MEXICO\$42.00

ALL OTHER COUNTRIES\$58.00

☐ Payment enclosed ☐ Bill me

Payable in U.S. funds drawn on a U.S. bank

☐ Bill Me

☐ Charge my subscription to:

☐ VISA ☐ MasterCard ☐ American Express

Acct. # _____

Exp. Date _____

City _____

State _____ Zip _____



YES! Begin my NewTekniques
subscription immediately!

☐ no

SIGNATURE _____

Date _____

Name (PLEASE PRINT) _____

Title _____

Company Name _____

Company Address _____

City _____

State _____ Zip _____

Phone (_____) _____

Fax (_____) _____

Internet/E-Mail Address _____

SUBSCRIPTION CARD

NEWTekNIQUES

131 W 1st St., Duluth, MN 55802-2065
Phone: 218-723-9477 • Fax: 218-723-9433

U.S. & POSSESSIONS\$32.00

CANADA & MEXICO\$42.00

ALL OTHER COUNTRIES\$58.00

☐ Payment enclosed ☐ Bill me

Payable in U.S. funds drawn on a U.S. bank

☐ Bill Me

☐ Charge my subscription to:

☐ VISA ☐ MasterCard ☐ American Express

Acct. # _____

Exp. Date _____

City _____

State _____ Zip _____



YES! Begin my NewTekniques
subscription immediately!

☐ no

SIGNATURE _____

Date _____

Name (PLEASE PRINT) _____

Title _____

Company Name _____

Company Address _____

City _____

State _____ Zip _____

Phone (_____) _____

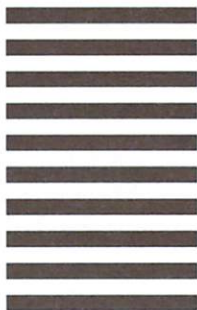
Fax (_____) _____

Internet/E-Mail Address _____

**BUSINESS REPLY MAIL**

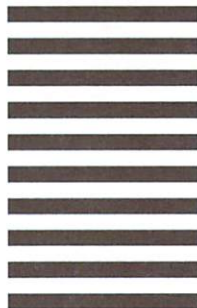
FIRST-CLASS MAIL PERMIT NO 665 DULUTH MN

POSTAGE WILL BE PAID BY ADDRESSEE

New Techniques131 W 1ST ST
DULUTH MN 55802-9882NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO 665 DULUTH MN

POSTAGE WILL BE PAID BY ADDRESSEE

New Techniques131 W 1ST ST
DULUTH MN 55802-9882NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

Been a while since you upgraded?

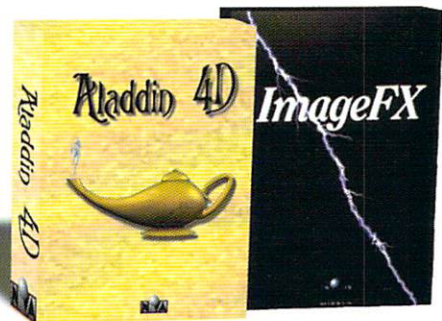


Just look at all the keen new features in ImageFX 3.0!

The all-new ImageFX 3.0 is here and it's everything you need! Showcasing the fastest image editing interface available, fantastic Toaster/Flyer support, multiple image editing windows, actual multiple image layers, large effects previews, hundreds of special effects and image processing functions and other things you never dreamed of or believed possible!

ImageFX is an Amiga owner's dream and also just happens to be the highest-rated image editing and special effects package on the market today! ImageFX lets you scan, paint, convert image formats, image process, create wild special effects and so much more!

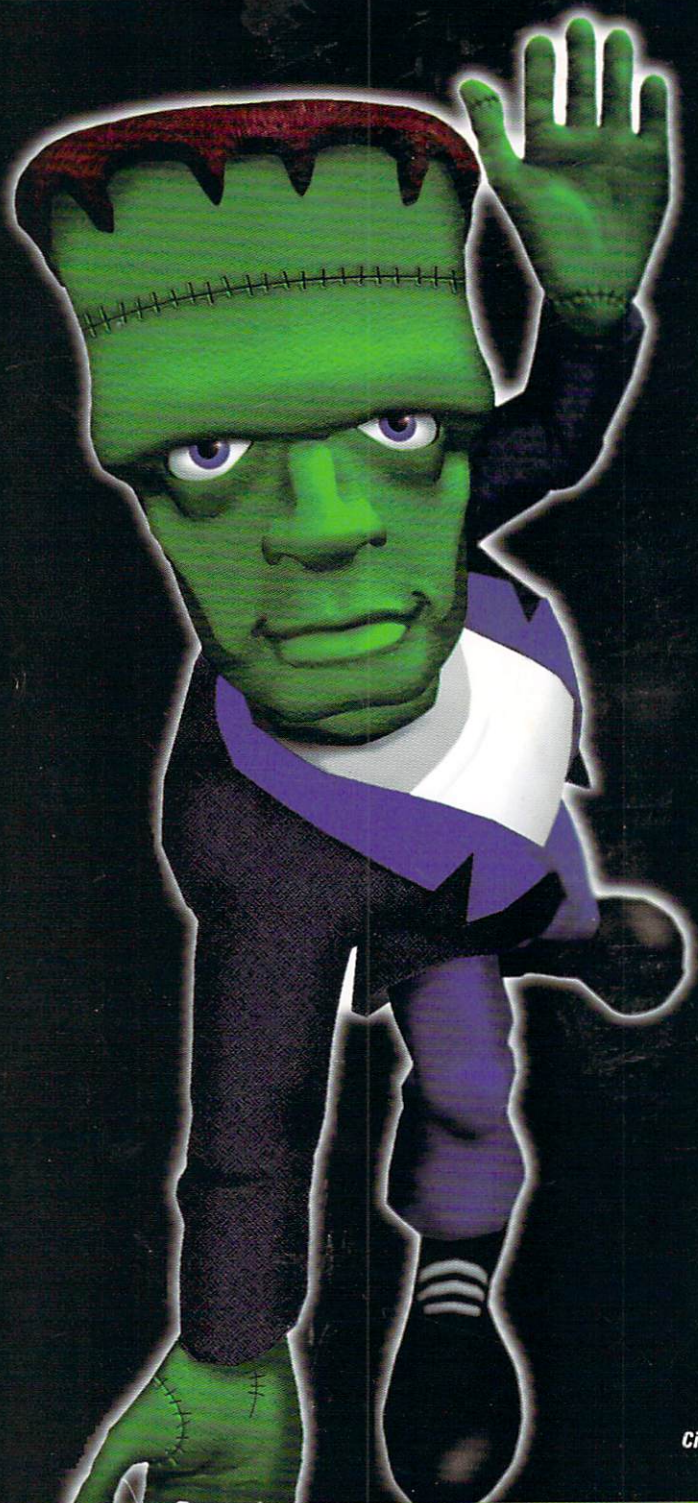
Call 1-800-IMAGE-69 (or 804-282-1157) to upgrade or ask for a new ImageFX at your local dealer or mail order firm.


Aladdin 4D and ImageFX are trademarks of Nova Design, Inc., 1910 Byrd Ave, Suite 204, Richmond, VA 23230 Sales/Information: (804) 282-5868, Fax: (804) 282-3768, Web: <http://www.novadesign.com>

Circle #230

Monster Motion

Life Forms3 Zaps New Life into 3D Character Movement



Monster innovations have brought new life to Life Forms!

Life Forms has always been the most innovative and intuitive solution for quickly creating movement in 3D character animation. Now, Life Forms zaps new life into your LightWave 3D and Inspire 3D characters!

With this powerful character movement tool, you'll easily animate 3D characters in minutes.

Simply read your LightWave 3D scene file into Life Forms 3 and apply mocap data or keyframe new moves - even animate Puppet Master sections. What's more, Life Forms 3 ships with over 600 ready-to-use keyframed animations and 160 motion capture files to get you moving right away!

With Life Forms' built-in IK, import/export support for mocap data, and many powerful new movement editing features, your characters will come to life before your eyes.

To explore the time saving and character enhancing world of Life Forms3, visit our website for a free demo download.

You'll discover a monstrous new ability.

Circle #200

3
LIFE FORMS

CREDO
INTERACTIVE INC.



QuickTime and the QuickTime logo are trademarks used under license.

www.credo-interactive.com/lightwave3d

lightwave3d@credo-interactive.com | toll free: 1-888-291-7453